INSTITUTING INVESTOR CAPITALISM IN EAST AFRICA:

ADOPTION AND UTILIZATION OF THE PRACTICE OF SHAREHOLDING IN KENYA, 2006-08

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Abstract

This dissertation studies the ongoing process of institutionalizing investor capitalism in Kenya's Nairobi Stock Exchange. The research is presented in three papers. The first paper studies active efforts by the state to recruit new investors through the use of mass advertising campaigns. The second paper studies investor entry into the market via a social diffusion process, where profits earned by geographically proximate and ethnically similar previous investors attract new investors. The third paper investigates how newly recruited, inexperienced investors utilize their shares after entering the market, focusing on rates of speculative trading. A unique, individual-level dataset of investor behavior was constructed based on access to the Nairobi Stock Exchange's electronic clearing and settlement platform to which data from several national surveys was merged.

BIOGRAPHICAL SKETCH

Christopher B. Yenkey was born in Salina, Kansas, and graduated from Salina Central High School in 1991. He attended Kansas State University and the University of Kansas for one year each prior to completing his Bachelor's degree in Economics at the University of Texas-Austin in 2001. Between the completion of his undergraduate studies and enrolling in the PhD program at Cornell University in fall 2003, he served as a Research Assistant at the Federal Reserve Bank of Kansas City. During his time at Cornell, Chris and Lynn enjoyed living in Slaterville Springs, New York.

I dedicate this dissertation to my wife, Lynn, and our son Peter Ray Allen Yenkey.

Our biggest adventures are still to come.

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PREFACE

My dissertation is a case study of the growth in investor participation in Kenya's Nairobi Stock Exchange (NSE), where the number of domestic investors increased ten-fold to 1.4 million from 2006 to 2008 despite weak property rights, low incomes, and low levels of financial literacy. In this case study, I focus on two questions central to understanding the process of institutionalizing financial markets in developing countries: 1) How is the practice of shareholding legitimated to a population situated in an environment of weak supporting institutions? 2) Once they do enter the market, how do inexperienced investors behave relative to professional investors, and how do new investors learn more effective share trading behaviors? My work explicitly addresses demand-side issues of financial market construction and in doing so seeks to bridge the gap between analyses of the macro-level institutional environment and micro-level social influences on market development.

I have compiled a unique dataset of micro-level investor behavior and macro-level institutional structure in Kenya. As a result of more than six months of field work in Nairobi, I was granted exclusive access to the NSE's electronic clearing and settlement platform. My database contains a longitudinal, individual-level history for all 1.4 million investors, showing a complete history of the quantity and timing of all share trades and ownership by each investor. Background information on each investor was also provided, including registration type (individual versus company; domestic versus foreign), gender, age, and town of residence. Knowing the location of each investor allows me to map each one with the use of geographic information software (GIS) and construct measures of behavior and performance for spatially proximate other investors. To this micro-level data I merged socio-economic control data based on the location where each investor lives from the 2005 Kenya Integrated Household Budget

Survey (Central Bureau of Statistics) and the 2006 and 2009 waves of the FinAccess National Survey (Financial Sector Deepening-Kenya). The resulting dataset contains information on timing of market entry, subsequent trading behaviors and market exit, as well as income, education, experience with formal financial products, and tribal ethnicity of the towns in which investors live. I use this data to model the influence of macro-level structural characteristics of the market, listed firms, and each investor's local environment as well as micro-level effects of interpersonal contact with other investors on investment and trading decisions.

Emerging stock markets are ideal natural laboratories for studying processes of endogenous institutional change. States, firms, and consumers come together in emerging markets to make sense of a newly introduced policies and practices, each assessing how the practice fits with the local context. States actively work to recruit investors, firms negotiate listing procedures and shareholder relations, and a diverse population of potential investors assesses shareholding's appropriateness for their needs given their particular local, informal normative contexts. Following adoption, investors big and small, inexperienced and profession, compete in a new arena, learning new share trading strategies directly from the behaviors of other investors as well as indirectly through repeated interactions with predictable market price movements created by political policies that manipulate the market for initial public offers.

The dissertation is comprised of three papers which seek to deepen our understanding of how Kenyan investors are first recruited and how they orient their trading behaviors once in the market. The first two papers address how investors are recruited into the Kenyan stock market, while the third studies how these newly recruited investors make use of the shares they own and how they learn to take advantage of profit opportunities in the market.

The first paper studies active efforts by the state to recruit investors through initial public offers of state-owned firms. Investors can be assumed to purchase IPO shares based on perceived self interest; the goal of this paper is to better understand the strategies used by advertising campaigns to construct this perception. The focus is an analysis of the large-scale advertising campaigns used to attract potential investors who are both unfamiliar with the practice of shareholding and potentially unfamiliar with the listing firm's line of business. The paper makes use of archival data documenting strategies used during privatization IPO advertising campaigns collected from the Nairobi-based advertising agency that conducts them, including strategy documents that identify consumer types and methods to reach them. The qualitative analysis is also supported by interviews conducted with advertising agency representatives, executives if listing firms, and regulatory officials. Descriptive quantitative data of advertising expenditures by listing state-owned firms, collected in partnership with a Nairobi-based market research firm, is also presented, which demonstrates that state expenditures on IPO advertising do not favor higher income and more heavily populated areas, which I take as evidence of a populist commitment by the state to recruit investors across a wide range of the total population.

The second paper in the dissertation takes a quantitative approach to studying the recruitment of new investors, modeling the diffusion of the practice between existing and potential investors through social networks based on both geographic and ethnic proximity that carry information about profitability of previous investments from current to potential investors. I consider the effect of geographically clustered ethnic groups on the national-level diffusion of this new economic practice in two ways. First, I consider how local levels of ethnic homogeneity affect a node's susceptibility to network contagion. Second, I consider how contagion flows

through two distinct network spaces measured by geographic and ethnic distance between existing and potential adopters of the practice. Recruitment is measured according to seven discrete time periods corresponding to the seven IPOs having taken place on the NSE since early 2006. The focus on IPO events as the primary pathway into market participation is justified by the fact that 90% of all Kenyan investors are new to the practice since 2006 and 98% of all new investors entered the market via subscription to one of these seven IPOs.

The third paper in the dissertation studies how newly recruited investors make use of their shares once they enter the market, with a focus on explaining rates of speculative trading in IPOs. Given that political manipulations in the Kenyan IPO market produce regular incentives to speculate in IPO shares, I am interested in how newly recruited investors learn to take advantage of such opportunities relative to professional investors. Empirically, I model rates of speculative IPO trading for investors based on experience in the IPO market, portfolio value, registration type, and social connections to other speculating investors. The analysis pays particular attention to the effects of experience in the market, seeking to advance earlier work in behavioral finance by utilizing longitudinal data for individual investors to provide a deeper understanding of how investment behaviors of newly recruited retail investors quickly evolve to closely resemble those of institutional investors.

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CHAPTER 1

SELLING THE MARKET TO THE MASSES: ADVERSITING, THE STATE, AND SYMBOLIC REPRESNTATIONS OF SHAREHOLDLING[1]

Introduction

This chapter approaches the issue of value creation in emerging financial markets by exploring the state's use of advertising to stimulate share ownership among new, domestic investors in the frontier stock exchange in Kenya. Creating a stock exchange as a formal organization is a relatively easy task to accomplish. A stock exchange can operate with just a few key components, requiring only a supply of companies willing to sell shares publicly, some minimum number of investors willing to purchase the shares, and a location in which intermediaries can meet to exchange bids and offers. Over the centuries this has taken place in such unlikely venues as a coffee house and under a buttonwood tree, as were the cases in the early years of the Amsterdam Stock Exchange in the seventeenth century and the New York Stock Exchange in the late eighteenth century, respectively. While it's fairly easy to create a stock exchange as a location in which shares can be traded, such an arrangement will be impaired from performing its intended functions—of mobilizing nascent capital, facilitating price discovery, and generating more liquid secondary markets—until a sufficiently large number of participants is assembled. The recruitment of a sufficient number of participants is one distinguishing feature that separates a stock *exchange* from a stock *market*. A stock

[1] This chapter is published under the title "Selling Value in Kenya's Nairobi Stock Exchange," in *The Worth of Goods*, edited by Jens Beckert and Patrik Aspers, forthcoming from Oxford University Press.

exchange as a formal organization can exist even when it fails to accomplish its stated goals, and indeed many newly created stock exchanges exist formally but remain functionally irrelevant because of low levels of participation (Sing 1997; Yartey and Adjasi 2007).

The recruitment of investors into frontier stock exchanges is a concern in scores of developing countries that have established capital markets in recent decades. The number of stock exchanges worldwide has doubled since 1985, with more than 70 formal exchanges having been established in this time period dominated by the spread of neoliberalism (Mondo Visione 2007). The global push to establish capital markets in developing countries brings to the front a previously overlooked aspect of the sociological study of financial markets: how to legitimate investor capitalism to new populations in countries that often lack a number of institutional structures that support such market structures. Potential investors in the frontier stock exchanges of Lithuania, Tanzania, or Slovenia, to name just a few, possess no previous experience with the practice and often lack knowledge of the firms whose shares are made available. In addition, this intangible financial technology is introduced into developing countries frequently characterized by numerous institutional weaknesses, including weak property rights regimes, volatile macroeconomic environments, and low incomes. This chapter addresses the question of how an actor living in such a vulnerable environment might come to value share ownership despite these stimuli.

Sociologists have long framed such questions in terms of the legitimacy of a product or a firm as it is adjudicated by potential consumers. A number of definitions of legitimacy relate to the degree to which an organization or practice conforms with both formal and informal social norms, including rules, regulations, and cultural beliefs and practices (for a detailed review, see Deephouse and Suchman 2008). Numerous empirical studies have explored this interplay

between accepted norms in the developed economy of the United States, but the purpose of this chapter is to investigate how legitimacy is constructed outside the context of the developed, often Western, markets in which it is often studied. Potential adopters of shareholding as a new practice in a developing country are frequently constrained by a lack of alternative investment options, which in turn contributes negatively to an already restrictive class mobility structure. In such an environment, are potential investors expected to decline an opportunity for socioeconomic advancement because they lack familiarity with a newly offered financial product?

Unlike previous studies of how legitimacy is constructed in developed market settings, I argue that in the context of developing countries, legitimacy is more strongly related to the aspirations of the potential investor than it is about achieving parsimony with norms and practices that are taken for granted. The new product offered need not be seen as consistent with past practices in order to achieve a high level of legitimacy and therefore adoption. Instead, the proposed product, in this case share ownership, achieves legitimacy by coming to represent an ideal that is in especially high demand in developing countries: upward socioeconomic mobility. This ideal is built around an expectation of future value: a potential investor does not need to understand what a share is, but must come to believe that share ownership represents a rare opportunity to improve one's material well-being.

Sociologists have previously studied this aspirational basis for consumer demand. Campbell (1987) writes of the role played by the "imaginative hedonist" in the formation of modern consumer society, arguing that the spirit underlying modern consumerism is less related to the material value of goods. Instead, judgments of product desirability are partially driven by practices similar to daydreaming, where an actor imagines achieving a particular state and then

consumes the goods that the actor believes will help achieve that state. Extending this argument, Beckert (2010) distinguishes physical value, which is based on the function an object performs, from imaginative and positional value. In more affluent consumer societies, where a higher proportion of consumer expenditures are spent on nonessential goods purchased with disposable income than on the provision of basic needs such as food and shelter, positional value is similar to patterns of consumption studied by Veblen and Simmel, where the products consumed by an actor help to situate that actor in a social space. Imaginative value, Beckert argues, is different in that the consumed object "performs as an arbitrator or bridge between the subject and a desired but intangible ideal" (2010: 9). The case study presented here makes use of these concepts, but in an empirical setting, where the physical or material value of a good is not so clearly detached from the "daydream" of a lifestyle less defined by material limitations. The connection I draw between aspirational emotions and economic action among Kenyan investors is similar to behaviors studied by other researchers. Studies of individual participation in state-sponsored lotteries, for example, show that lower-income groups make up the majority of lottery ticket buyers, a reflection of hopes of improved material well-being (McConkey and Warren 1987; see Beckert and Lutter 2009 for a review). This mixing of aspirations with material gains is related to work by Keister (2000), who studies how American households seek wealth accumulation in adherence to notions of the "American dream," which amounts to an ideological commitment that each generation should leave its heirs materially better off. Here parents engage in rationally calculated investment behaviors toward the goal of material gain, but the catalyst for these is a more ideational commitment to provide greater resources to their children than they received from their own parents.

But how does one choose a course of action intended to realize such aspirations? Suchman condenses numerous conceptions of legitimacy based on calculated self-interest into what he calls pragmatic legitimacy, which he defines as "the self-interested calculations of an organization's most immediate audiences" (1995: 578**).** Potential investors in developing countries have the same material motivations as do investors in developed countries—both groups purchase shares because they believe that doing so is in their financial best interest. This assumption, however, reveals nothing about *how* potential investors come to associate share ownership with material gain, particularly in light of the lack of prior experience of the new investors who are the focus of this analysis. Potential investors in Kenya frequently lack access to objective sources of information that might be used to judge the attractiveness of a given investment, such as records of past firm performance or access to financial advisory services. As a result, these actors are increasingly reliant on the perceptions of firm performance rather than on objective calculations of it.

This chapter investigates one major source of these perceptions, the state's use of mass advertising campaigns intended to persuade inexperienced investors that share ownership represents an opportunity for upward social mobility. The larger issue at hand is the state's effort to construct of a more functional market apparatus, a more macro-level issue in line with previous research on market construction (e.g. Callon 1998; Aspers 2009). However, the scope of this chapter is more limited. Following loosely in the footsteps of Bourdieu's (2005) study of the French suburban housing market, this chapter studies how an advertising campaign for an initial public offering (IPO) in Kenya elicits an aspirational response from potential investors. This chapter is less directly aimed at understanding Kenyan consumers and has an overt focus on how the state seeks to activate them.

Advertising's Role in Generating Familiarity amid Uncertainty

The concept of "invest in what you know" was popularized by investment advisor Peter Lynch (1990) in the late 1980s. Prior to that, this idea was formalized by economist Robert C. Merton (1987), who constructed an asset pricing theory recognizing that a large proportion of investors' trade is based on familiarity rather than on performance. A growing sociological literature investigates the role played by advertising in producing this effect. For example, Kihlstrom and Riordan (1984) argue that potential consumers understand that advertising is a costly use of resources, and therefore firms that engage in large advertising campaigns are seen by consumers as more profitable, more stable, and consequently a more desirable investment. Grullon, Kanatas, and Weston (2004) find that advertising intended to improve a firm's position within product markets has a spillover effect into capital markets, and Pollock and Rindova (2003) show that increased media coverage for listing firms drives up IPO share prices.

Previous studies such as these suggest that not only does advertising have a positive impact on the willingness to invest in a particular share, but this effect is felt more strongly among less experienced, less financially literate investors. Advertising performs a similar role in Kenya as it does in the U.S., and this chapter investigates how such expectations are constructed among inexperienced investors in the emerging stock exchange in Kenya through the state's use of large-scale advertising campaigns. I will argue that the demand for share ownership is not the result of individual calculations of firm performance; instead, perceived value is constructed through advertising campaigns that make use of symbols of socioeconomic advancement, attainable through share ownership, to attract inexperienced investors. In this manner, potential investors need not become familiar with the share as an object itself. Instead, value is constructed

by convincing the investor that the source of that object possesses scarce resources which satisfy the desired ideal.

Before exploring a specific advertising campaign used to recruit new Kenyan investors into the stock exchange, it is helpful to understand the opportunity structure in which such campaigns take place. The following section introduces the reader to the Kenyan investing public as well as to recent policies adopted by the Kenyan state to make share ownership financially possible for large segments of the population.

The Kenyan Context: Mass Retail Investing in a Volatile Environment

The Nairobi Stock Exchange (NSE) was formally established in 1954 as an overseas affiliate of the London Stock Exchange during the period of British colonial rule. British businessmen governed the market, excluding indigenous participation, until Kenyan independence in 1963. From independence in 1963 until 2005, the NSE operated as a closed group controlled by a small number of stockbrokers, who restricted access to share ownership at the expense of market growth. A lax regulatory environment allowed firms listed on the stock exchange, most often in cases of privatizations of state-owned firms, to sell shares to a small group of stockbrokers, pension funds, government officials and other Kenyan elites. However, these barriers to entry for small-scale shareholders were directly addressed in the Privatization Act of 2005, passed by the Kenyan Parliament in that year. With the belief that the state stood to benefit from the economic growth potential of a more active capital market, the 2005 Act contained several provisions that forced the NSE and its intermediaries to accept a higher degree of retail shareholding.

Formally, the Act requires that any firm listing on the NSE must make no less than 25% of its shares available to no fewer than 1,000 shareholders. The Act also requires approval by the state regulatory agency, the Capital Markets Authority (CMA), of several key features of each

initial public offer (IPO), including the initial share price to be charged, the minimum number of shares allowed in a single application, and the allocation of IPO shares across different types of investors such as retail, institutional, and employees of the listing firm. The CMA was given the authority to restrict the use of price discovery techniques, resulting in IPO procedures where all investors subscribe to their desired number of shares during a subscription period held over the course of several weeks prior to the shares being listed on the exchange. In the event of an oversubscription to the IPO, which occurs regularly, share allocations are made to each applicant according to a pro rata policy, whereby each investor receives a proportion of subscribed shares based on the total subscription level in the IPO. The end result of these provisions is that by withholding approval for listings, the state is able to set fixed prices for IPO shares and dictate what proportion of those shares will be reserved for small-scale retail investors. The state can also force listing companies to set low minimum buy-in levels, which has the effect of reducing the financial barrier to entry for lower-income investors.[2] While the formal provision of the Act requires that 25% of shares be allocated to at least 1,000 investors, the interpretation and application of that provision goes far beyond what is formally required. With share prices fixed, minimum buy-ins held low, and allocation policies controlled by the regulator, the state effectively forces listing firms to allocate a high percentage of IPO shares to retail investors, who are now able to buy in small lots without the worry that their applications could be priced out by higher bids from institutional investors.

A former chief executive of the CMA discusses the functional goals of this policy:

> The theory here was to be sure the shareholding was reasonably wide to give liquidity in the marketplace. This is a standard requirement for most emerging markets and stock exchanges. You see, most emerging markets stock exchanges—they have that level of pressure. The government came up with a

[2] The use of such politicized offer terms is common in emerging markets, where states adopt listing requirements that incentivize participation by retail investors. For a more in-depth review of the practice, see Jones et al. (1999).

> policy . . . which was a privatization policy that stated clearly that the allocation of the shares in [the] IPO would be distributed on the basis of ensuring wider participation of the investors, and therefore individuals were given a higher priority than institutional investors.

At the time of passage of the Privatization Act of 2005, there were an estimated 140,000 total shareholders in the exchange, but by the end of 2008 that number had grown to almost 1.5 million in a country of approximately 6 million households. For the first time in Kenyan history, a critical mass of individuals has started to transition out of traditional, tangible assets such as real estate, land, and livestock as preferred savings vehicles and into intangible assets like stocks. This transition has occurred in an environment characterized by low incomes and low savings rates, a weak property rights regime, high information asymmetries, and unstable bureaucratic and macroeconomic environments. For example, per capita GDP in Kenya in 2006 was approximately $700, and fewer than one-third of households earn more than double the poverty wage. Given that access to disposable income and household savings is a prerequisite for purchasing shares or other savings or investment vehicles, the low average incomes in Kenya and the low percentage of the population living above double the poverty line would predict that few would purchase shares.

In addition to the low average income in Kenya, the protection of property rights that many scholars argue is necessary for capital market investment (La Porta et al. 1997) is also conspicuously lacking. Kenya ranked 84th on the World Bank's 2008 Investor Protection Index, which measures the strength of the regulatory framework surrounding legal enforcement of contracts and disclosure of material information to shareholders. The weakness in the rule of law in Kenya is also manifested in the extreme level of corruption in Kenya, exemplified by Kenya's global ranking of 150th in Transparency International's 2007 Corruption Perceptions Index.

Despite these background conditions, approximately 1.3 million new investors have purchased shares at the NSE since early 2006. This boom in the investing population in Kenya reflects the state's effort to ensure that a broad range of Kenyan society has the opportunity to participate in the stock exchange. Of the 1.47 million total accounts on the exchange, more than 86% are Kenyan citizens registered as retail investors, while just over 12% are registered as Kenyan companies. Reflecting some success in the state's effort to attract a shareholding base that more closely resembles Kenya's overall population, the median portfolio value among all investors is $68. Among retail investors, portfolio values at the 99th percentile are just under $9000, while for company investors portfolio values for the top 1% are closer to $40,000. The distribution of portfolio values across investors reflects the high levels of wealth stratification seen in the overall Kenyan population, as the author estimates that more than 60% of total market capitalization is concentrated in the accounts of fewer than 10% of investors.[3] Growth in participation in this market has been an almost entirely domestic affair, as approximately 1% of all account are held by non-Kenyans, and half of those are non-East Africans. Contrary to common assumptions about the large degree of foreign ownership across emerging markets, recent research has shown that foreign investment in African capital markets is practically nonexistent outside of South Africa (Moss, Ramachandran, and Standley 2007).

Seven firms have undergone IPOs on the NSE since the passage of the Privatization Act in 2005, and new investors reacted with differing levels of demand to each of these offers. The author calculates that fewer than 30,000 of the approximately 1.3 million investors new to the NSE since early 2006 purchased their first shares outside of an IPO event, a fact that strongly

[3] Measures of total numbers of investors and the portfolio value of each account are made possible through access to the databases of the Central Depository and Settlement Corporation (CDSC), the legal entity that serves as the clearing and settlement authority for all transactions on the NSE. Descriptive data presented here is from a snapshot taken on June 9, 2009 of all shareholding accounts.

suggests any explanation of the legitimation of shareholding in Kenya should focus on attributes of these IPOs. Table 1.1 shows descriptive statistics for each of the seven firms that have listed on the NSE since mass retail shareholding was enabled by the Privatization Act of 2005. In addition to showing the total number of new investors recruited into the stock exchange in each IPO, Table 1.1 shows the level of state ownership of each firm, the firm's size in terms of gross revenue (in thousands of Ksh) in the year just prior to listing, the advertising budget in Ksh designated for the IPO itself, each firm's financial performance as measured by the average change in yearly gross profit over the three years prior to listing, the cost of the minimum buy-in required of each investor in Kenyan shillings (Ksh), and the change in price of shares of the previous IPO at the time of listing. Several regularities are worth noting. First, state-owned firms attract the lion's share of new investors, recruiting more than 943,000 new investors in IPOs of four firms either entirely or majority-owned by the state. This compares to a total recruitment of almost 215,000 new investors for all IPOs of firms that are either entirely private or have the state as a minority shareholder. IPOs of state-owned firms are also associated with lower minimum buy-ins and considerably larger budgets for general advertising as well as IPO-specific advertising. With the exception of the two most recent listings, state-owned firms also show the weakest financial performance in the three years prior to listing.

Table 1.1

Table 1.2 presents correlation coefficients between the number of new investors recruited by each firm in the first five IPOs following passage of the Privatization Act of 2005, and the attributes of each firm relative to its IPO and the market. The correlations presented in Table 1.2

suggest that the decision by an actor to first enter this market is less oriented towards past firm performance. Instead, actors appear to be drawn into the practice of shareholding by larger firms who employ large advertising campaigns and who offer shares at low minimum buy-ins. New investors are also increasingly drawn to IPOs that follow a previous IPO that experience more positive gains in share price after listing. The traits of larger firm size, low minimum buy-in, and large advertising expenditure were the exclusive purview of the state-owned firms being privatized via the NSE during this time.

Table 1.2

While it is not the purpose of this chapter to argue that any one attribute of a firm or its IPO is the most influential in attracting new investors, since a quantitative analysis is restricted by the low number of IPO events. , the strong correlation between advertising expenditures and recruitment of new investors, especially relative to other potential influences, nevertheless suggests that much can be learned by better understanding how the state conducts its advertising campaigns in its quest to recruit new investors.

Advertising and Value Creation in the Kenyan Market: Aspirations and Expenditures

This section begins by discussing theories of how state ownership of a firm, independent of other characteristics, signals value to potential investors in Kenya. Next, I present a case study of an advertising campaign for a recent privatization carried out through an IPO on the Nairobi Stock Exchange. Finally, I explore how the state allocates its advertising budget for three privatization IPOs across the country, showing that the state allocates resources toward recruiting a broad range of Kenya's population rather than targeting upper-income groups.

The State as a Signal of Wealth and Class Mobility

Political science has a well-developed literature that demonstrates the role of the state in determining access to material resources and wealth-generating opportunities, and therefore ultimately determining social class in African countries. Sklar (1979) was among the first to make the argument that the state filled the void left by departing colonial governments in many African countries, including Kenya, when independence swept the continent in the early 1960s. The response of the Kenyan state to the end of colonial rule was similar to that in many other newly independent African countries, which was to nationalize most means of production and concentrate these resources in the hands of a governing elite that was predominantly headquartered in the capital city. As a result, a ruling elite emerged in the 1960s and 1970s that controlled the majority of the wealth in most African nations. Diamond (1987) continues this analysis by elaborating several pathways through which Africans can access state-owned resources and thereby gain access to a higher class position. Among these, and central to the theory presented here, is the role played by clientelism and state patronage. Here, individuals that achieve a position in the state such that they have access to resources are expected to transmit such resources back to their local community via kinship and ethnic networks. In this manner, a well-placed individual can support a large constituency by redistributing state resources to supporters. It is also true, therefore, that in order to gain access to scarce resources in an African state it is necessary to have such a link to the government.

Given that the majority of citizens in Kenya have no such patron to serve on their behalf, and given that the citizens understand that a large proportion of resources in Kenya are controlled by the state, it is not surprising that a mindset develops that stimulates Kenyans to try

to gain access to the state in some manner as a means of improving their material well-being. Bratton, Mattes, and Gyimah-Boadi (2004) find evidence through the Afrobarometer survey of public perceptions of market liberalization policies in sub-Saharan Africa that a high proportion of respondents believe that economic policies and recent economic reforms increase income inequality by favoring individuals with close ties to state organizations.

This suggests that Kenyans are predisposed to see state-owned firms as access points to resources needed to improve one's class position. Therefore, when an opportunity arises to partake in ownership of a state-owned enterprise, new investors in Kenya will be predisposed to take advantage of that opportunity without seeking additional information with which to calculate expected returns. In short, state ownership of the firm acts as a cognitive heuristic that signals value in the shares offered net of other characteristics of the firm that potential investors might consider. Even if potential investors are hesitant or unfamiliar with the act of purchasing shares, the possibility of sharing in the ownership, and therefore the wealth, of a state-owned firm signals an expected value that outweighs the reticence to engage in an unfamiliar practice.

The individual's view of the state as facilitating class mobility is complementary to the state's motivation for adopting the politicized offer terms discussed previously. While the individual seeks class mobility via access to state resources, the state seeks to mobilize pockets of nascent capital and increase liquidity in the emerging capital market by deepening market participation among the general public. Seen in this way, the state and the populace become codependent in their search for material resources.

The State's Use of Advertising: Symbols, Aspirations, and Perceived Value

The remainder of this section examines how a particular privatization IPO advertising campaign is carried out in Kenya. Data presented here was collected through archival research of internal documents obtained from the Nairobi-based advertising agency that executed the campaign and semi-structured interviews conducted in the field with representatives of the advertising agency, executives of the listing firm, and Kenyan market regulators. The focus of this analysis is the IPO of the Kenya Reinsurance Corporation, the fifth IPO in the post-Privatization Act era. This IPO is particularly illustrative because it represents a concerted effort by the state to build a sense of value around a completely unknown company operating in an unfamiliar industry. Unlike the IPO of state-owned telecom giant Safaricom, a highly visible and popular firm in Kenya which generated the highest number of new investors into the market (see Table 1.1), Kenya Re started its IPO process as an almost total unknown to the general public. Additionally, Kenya Re exhibits the most strongly negative financial performance of any of the post-Privatization Act firms in the three years prior to listing. The Kenya Re IPO benefited somewhat from the publicity given to four earlier IPOs, but as suggested by the correlations in Table 1.2, the Kenya Re IPO most likely was at a disadvantage given the poor share price performance of the two IPOs that preceded it and the company's higher than average initial share price. However, Kenya Re has by far the highest advertising expenditure, when measured as a percentage of firm gross revenue, of any of the seven firms that have listed since the Privatization Act. Finally, because all IPO advertising campaigns for state-owned firms listing on the NSE are handled by the same advertising agency, an analysis of one campaign serves as a representative sample of all others.

The advertising agency begins by assessing what it calls the "consumer psychographic types" of potential investors within the Kenyan population. These are ideal types of potential investors that advertisers use to understand how categories of potential constituents might react to different advertising strategies. The three categories of potential investors are summarized in Table 1.3. The common theme running across these groups is an orientation toward familiar, stable, and lower-risk brands or products. The consumer is best approached with a product seen to virtually guarantee positive returns and minimize risks, and that is strongly associated with previously understood and accepted practices. These attributes are directly in line with the definition of legitimacy discussed above, but with the exception that Kenya Re at the outset is an unknown firm and these qualities will have to be constructed through the advertising campaign.

Table 1.3

To do so, the agency outlines a four-stage advertising campaign for each IPO, geared toward portraying the offer according to the attributes to which mainstreamers, aspirers, and succeeders are likely attracted. Table 1.4 provides a description of each of these four stages. The first stage, called the awareness phase, makes no mention of the IPO itself, seeking only to increase consumer recognition of the firm's name and line of business as well as creating an image of profitability. The second stage, called the pre-listing phase because it takes place just before the subscription period opens, introduces the idea that for the first time outsiders can become owners of this profitable company but without providing details of how ownership is actually negotiated. In the listing phase, the third phase, the logistics of how, when, and where to purchase shares are introduced. The final phase, the countdown phase, ensures that potential

investors understand that becoming an owner of the firm is a limited time offer. Advertisements in this phase seek to create a sense of urgency by making a prominent display of the number of days left until the opportunity expires.

**Table 1.4

As stated in internal advertising agency documents, this four-stage strategy "represents a process that investors go through of learning, feeling, and finally doing." Beginning with the recognition that potential investors are not familiar with these companies, the advertiser builds a familiarity for the company by associating the firm with a product or line of business that the public is already familiar with. Next, that product or line of business is shown to be part of a profitable enterprise. After these claims of profitability, the individual is introduced to the idea that it is possible to share in these resources by becoming an owner in the firm. Finally, the potential investor is instructed on how to act on this opportunity within a limited time frame. Each of these advertising phases is accomplished using strong symbolic references, images that represent ideals that are cognitively accessible to an unfamiliar public.

Through the use of focus groups before this campaign began, the advertising agency identified a pervasive image of strength and stability known to the Kenyan public: the baobab tree. The account manager for the advertising agency that conducted the campaign explains:

> What we did first was to have an identifier for this IPO, and you can see that we have the Kenya Re logo, but then we came up with this tree [the baobab tree] because our focus group research asked people to tell us something that said "solid." We told [the focus group] the characteristics of Kenya Re: it won't go down, it would not do this and that, and this is the kind of tree people told us about. It is a specific species of tree. It is very solid. We use this tree and tell them that "Kenya Re secures your future."

The baobab tree has a particular significance in African culture. Often referred to as "the tree of life," it has long been a symbol of stability and comfort in difficult times, providing shelter and nourishment, with edible fruit and bark that are used for a number of traditional remedies and products. The baobab tree is a common landmark on the African savannas; its trunk stores large quantities of water and is often tapped during periods of drought. In the awareness phase advertisements for Kenya Re, an example of which is shown in Figure 1.1, this traditional symbol of comfort and stability serves as a backdrop to a more contemporary symbol of an upper-middle-class lifestyle: a large home. As explained by one advertising agency strategist:

> When you're doing [IPO] advertising, you want to show something that's aspirational. You have to use a vision that people can understand. This is a home. There is an insurance company behind the home. And behind the insurance company is Kenya Re. And it's a nice home, huh?

The consumer is introduced to the firm and the reinsurance industry through these symbols, as the advertisements state that home insurance, a more familiar product, is itself backed by reinsurance, thus making the potential consumer aware that even insurance companies purchase insurance, and Kenya Re is the source for that reinsurance. In advertisements placed during the latter part of this first phase, claims are made of the strong performance of the company. In the background of these performance claims, examples of which are shown in Figure 1.2, the consumer gets a closer view of the tree as more details of the company are provided.

Figure 1.1

Performance claims create a direct link between the symbols of prosperity suggested in earlier advertisements and a concrete method by which share ownership can deliver on those aspirations. Claims of high profit rates, growing financial clout, high market share in a common commodity and other claims are designed to provide a justification for the idea that this particular company can fulfill the aspirations established in the earlier ads. The advertising agency account manager for the campaign clarifies the idea further:

> You remember we had our tree, which was our symbol for Kenya Re; it's growing bigger and bigger, and now you're moving out to the branches; we're zooming in and getting more specific and telling people that our investment standard is eight billion and we're growing bigger every year. You really have to play. The idea is to play around with the numbers and interpret the numbers to people and tell them what they mean.

This playing and interpreting, however, can prove to be a bit of a gray area. In one ad, Kenya Re's credit rating is claimed to be "an impressive international rating of B+." Objectively, a B+ corporate bond rating is indicative of highly speculative, non-investment-grade firms by all major ratings agencies. Even if Kenya Re's claim of B+ is meant to suggest a credit score among the highest of the B ratings, this falls somewhere between an upper- and lower-medium-grade risk category. However, a population of potential investors unfamiliar with formal credit rating schemes is more likely to associate "B+" with an above-average exam score than a below-average credit rating. In another Kenya Re ad, also shown in Figure 1.2, it is claimed that pretax profit reached 719 billion in 2006 and that it is increasing each year. An investigation of the audited financial statements provided in the IPO prospectus, however, suggests that this is an exaggerated interpretation of the company's financial strength. First, Kenya Re's pretax profit in 2006 is listed in the audited statement as only Ksh 647 million (just under US$1 million), but

more significantly, the post-tax profit of the company sharply declined in 2006, falling almost 50% from 2005. The 2006 post-tax profit for the company was at its lowest since 2002.

Figure 1.2

Such exaggerated performance claims, however, fit with the advertiser's understanding of the receptivity of the psychographic types of potential investors mentioned earlier. Mainstreamers in particular, who make up the largest group of expected investors, are believed to be highly susceptible to claims of low-risk, high-return investments. In the agency's internal documents, the mainstreamer is "eternally optimistic and will vehemently try to maintain a decent standard of living. If the share offer is perceived to be at zero risk, with higher returns and affordable, they would definitely consider subscribing despite market conditions." For these potential investors, the strategy is to demonstrate that the firm has achieved a significant size, which in the unstable environment of sub-Saharan Africa can be a powerful symbol of stability and resources. In fact, the agency recognizes that firm size is an important part of potential investors' perceptions of value. In an internal advertising strategy document for the KenGen IPO, the advertising agency states, "It is vital for the company to look, feel, and act big. Big companies have big bottom lines and therefore big returns for the investors."

Figure 1.3 shows an example from the countdown phase, meant to generate a sense of urgency among potential investors. Here, the central message is that this opportunity is available only for a limited time. This series of advertisements provides a literal countdown of the number of days remaining in the subscription period, with ads counting down the fifth, third, second, and final day to submit a share subscription.

The discussion so far has focused exclusively on the print campaigns, but in addition to the print campaigns, radio programs are used even more extensively to access potential investors in more remote areas. In fact, the number of interactions between consumers and the advertising campaign is designed to be more than ten times higher for exposure to a radio advertisement than a print advertisement. Newspapers are considered a luxury item for most Kenyans, as only a minority of Kenyans able to afford the price of a daily newspaper. Just under 500,000 newspapers are printed each day in Kenya, and each costs approximately 75 cents, about 40% of a Kenyan's average daily income. Radio, on the other hand, is recognized as reaching a much wider audience more frequently. The content of the radio advertisements follows the same pattern as the print campaigns in both intent and substance: the company is introduced in a manner that associates it with the same symbols and aspirations as does the print campaign, the profitability of the firm is introduced next, and the concept of becoming an owner by way of the IPO, along with the logistics of how to do so, are introduced last.

Figure 1.3

The radio campaigns, however, afford the advertiser one more way in which to incorporate location-specific familiarity into the campaign. Radio campaigns rarely use pre-taped messages, as is the norm with ad campaigns for existing consumer goods. Instead, local radio personalities, including disk jockeys and talk show hosts, are paid to present these concepts in a less formal, conversational manner, using local languages and dialects and references to local landmarks or other well-known symbols. Because such "advertisements" cannot be presented in paper form, little space is allocated for a discussion of radio campaigns here. However, a

representative from the advertising agency summarizes the power of radio campaigns in addressing a culturally heterogeneous Kenyan population, made up of more than 40 different tribes and speaking even more languages:

> What happens is that it is very difficult to target different parts of the country, but on radio you can do that because there are 42 different radio stations. So, when you're targeting Nairobi, you only pick those that broadcast in Nairobi. If you're targeting up-country, you look at the research that shows what stations are stronger in different areas. In the pre-offer period, we use a different strategy to push people to go subscribe for those shares. It's called a radio activation. We empower the presenters, we give them a lot of information [similar to what is contained in the print campaign], and these presenters push the message to those people. On each radio station [in each region], they push the message in their own languages, so it tends to be more believable.

Allocating Advertising Budgets: Demonstrating the State's Commitment to Mass Retail Shareholding

Employing different radio stations to target different parts of the country brings up the final element of IPO advertising considered in this chapter: the allocation of the state-owned firm's advertising budget across the country. IPOs, being rational business ventures, might be expected to stray somewhat from the stated goal of a populist-oriented approach to recruiting large numbers of investors in which advertising campaigns would focus on areas of the country with higher population densities or higher concentrations of upper- and middle-income groups (Meyer and Rowan 1977). This section of the chapter tests whether the state's rhetoric of mass retail investing is consistent with its allocation of advertising budgets, by quantifying how the radio portion of the respective advertising budgets for three privatization IPOs is allocated across the geographic and socioeconomic distributions of the Kenyan population. Data for the first three privatizations following the passage of the Privatization Act of 2005 is presented here in order to better establish the pattern in advertising expenditures across privatization IPOs. In addition to the Kenya Re privatization that has been the focus so far, data is presented for the IPOs of

KenGen, the state-owned electricity utility, and Eveready East Africa, a familiar consumer goods firm that specializes in disposable batteries. The Kenyan state owned just over one-third of this multinational corporation until its 2007 IPO, when the state divested the majority of its shares and private owners floated a much smaller portion. The privatization of telecom firm Safaricom is not considered here, because advertising data for that IPO is not distinguishable from spending on other forms of advertising and therefore does not provide a consistent comparison across firms.

IPO advertising expenditure data was obtained from a Nairobi-based market research firm. Each radio advertisement has been assigned a valuation equal to the retail price an advertiser would be expected to pay for a particular ad to run in a particular outlet. The actual rate paid by the advertiser is unknown, as purchasers of large quantities of advertising are often able to negotiate discounts with various media outlets. What is available is a measure of the total volume of advertising to which a geographic region is exposed, and this volume is expressed in terms of its expected price.. The volume of IPO advertising in these privatization IPOs is calculated using the geographic footprints of the 42 radio stations that broadcast across 16 regions in Kenya and the amount of radio broadcast time allocated for each IPO on each station. While data is available on all forms of media expenditure for each IPO, a focus on the distribution of spending on radio advertising is warranted for a few reasons. First, radio is the only medium virtually guaranteed to be experienced by all Kenyans, as lower-income citizens are significantly less likely to come into contact with either print or television advertisements. Second, the geographic footprints of Kenya's 42 radio stations are more precise than those for print or television media, allowing for reliable calculations of the amount of advertising broadcast in each geographic region. Furthermore, radio advertising is the dominant media type

employed in IPO advertising campaigns, comprising more than 70% of the total advertising budgets across IPOs.

Figures 1.4 and 1.5 show scatterplots of advertising expenditures in the three privatization IPOs across the 12 most populated regions in Kenya, with Figure 1.4 showing expenditures relative to the total population of the region and Figure 1.5 showing expenditures relative to the proportion of that region considered to be in the highest socioeconomic status group. Only the 12 most populated regions are considered here, because several of Kenya's regions contain few if any investors and receive little or no advertising exposure. Even if the state's goal is to establish widespread share ownership, it is an unavoidable reality that some of the country's regions are sufficiently poor that share ownership is not viable. For that reason, the analysis here restricts the focus to only those regions with a reasonable chance that some minimum number of individuals from the general population might adopt the practice. Data for total population and socioeconomic status is taken from the 1999 Kenya Population and Housing Census. The proportion of the regional population considered to be of high socioeconomic status is measured as the percentage of residents of that region who report living in a permanent dwelling with an improved floor and roof, with access to an improved water source and a flush toilet. Given the difficulties of collecting valid income data in developing countries, measurements of socioeconomic status based on measures of standards of living rather than reported income are preferred.

Figure 1.4

Figure 1.4 shows the retail value of radio advertisements broadcast in the 12 most populated regions in Kenya in each IPO. Figure 1.5 plots the expenditure measure against the percentage of the region's population that meets the above definition of high socioeconomic status. Both scatterplots suggest that the Kenyan state is sincere in its commitment to recruit shareholders from the general population, because the state allocates consistent proportions of advertising resources for each IPO across regions regardless of population or concentration of wealth among the population. The trend lines for advertising in the KenGen IPO are only slightly positive, suggesting that advertising budget allocations for this first IPO only slightly favor more heavily populated areas and more wealthy regions in Kenya. The trend line for Kenya Re IPO advertising spending is slightly negative for the total population and flat when graphed against the wealth of the region's inhabitants. Trend lines for the Eveready IPO are slightly positive, perhaps consistent with the firm's two-thirds majority private ownership prior to the IPO. Eveready is also the smallest firm of these three, one-third smaller in terms of gross revenue in the year prior to listing than Kenya Re and one-fourth the size of KenGen. When interviewed, Eveready executives reported that the firm had tried to minimize the total number of investors resulting from the IPO because of the high cost of servicing shareholders for a small firm.

Figure 1.5

The slight difference across the three IPOs, consistent in both scatterplots, may suggest that the state slightly favored more populated and more wealthy areas of the country in its first effort to recruit new investors during the KenGen IPO, but that by the time of the fifth IPO it had begun to target more of the country's lower-income investors. However, this interpretation is

called into question when one considers the range of advertising expenditures allocated to the least wealthy regions in Kenya. In all IPOs, the regions with the lowest concentrations of wealthy inhabitants experience both the lowest and the highest allocations of radio advertising budgets, equal to or greater than the expenditures in more wealthy regions. Additionally, in all three IPOs the region with both the highest concentration of wealthy residents and the largest population is the region including Nairobi, the capital city, which is the furthest point to the right in both graphs. Both graphs show that Nairobi receives less advertising resources than many other smaller and poorer regions and is also below the trend line for all 12 regions. The only exception to this trend is that Nairobi receives a slightly higher level of spending during the Eveready IPO than predicted by the trend line, a finding in line with a more private-sector approach to investor recruitment.

These patterns of allocating larger portions of IPO advertising budgets to smaller and poorer regions of the country are consistent with the state's overt goal of recruiting the general public into share ownership. They are also consistent with an explanation that residents of larger, wealthier, more urban areas might require less persuasion to take part in such an opportunity, since they might be expected to already be familiar with these large state-owned firms as well as the practice of shareholding. Or, if they are not familiar with these, they are perhaps more accustomed to other intangible assets and trade practices, such that these wealthier residents require less convincing to subscribe. The comments from one Kenya Re executive are in line with earlier work on the disproportional effects of advertising to retail as opposed to institutional investors:

> Of course there was a lot of advertising, and we ran lots of publicity. Kenya Re owns lots of well-known properties [around Kenya]. This visibility helps. Especially with the retail investors it helped. I think with the institutional

> investors, fund managers, they know more and rely less on the advertisement. It helped mainly with the retail investors.

Concluding Discussion

This chapter began by identifying a tension that arises for many emerging stock exchanges in developing countries around the world: how to recruit a sufficient number of participants, such that the formal organizational structure established by policymakers is better able to realize its functional goals of mobilizing nascent domestic capital and improving liquidity in the secondary market. Numerous weaknesses in the formal and informal institutional environment in Kenya might be expected to make potential investors reticent to adopt the practice of shareholding, including weak property rights, volatile macroeconomic indicators, low incomes, a lack of previous experience with share ownership, and a historical preference for the use of tangible assets, such as land and livestock, as savings vehicles. The focus of the analysis presented here is state use of advertising campaigns that convey share ownership as a rare opportunity to access the state's material wealth by purchasing shares in a privatization IPO. Such a purchase signals an opportunity for socioeconomic advancement to a broader range of the Kenyan population than would normally have access to it. This process of democratizing shareholding in state-owned firms began with the regulatory reform in 2005 that enforced low initial share prices on the stock exchange, and the process continued with large-scale advertising campaigns for IPO events, which informed citizens of the approaching opportunity in order to mobilize their participation.

The analysis of the advertising campaign presented here differs in two important ways from earlier work by sociologists on the role played by advertising in affecting financial market outcomes (Kihlstrom and Riordan 1984; Pollock and Rindova 2003; Grullon, Kanatas, and

Weston 2004). In earlier works, scholars investigated the effects of the presence of advertising on asset prices in financial markets. In the Kenyan context, however, prices are set by the state. Accordingly, the more appropriate measure of how advertising affects market construction is the extent to which new investors are persuaded to enter the market, rather than the prices they pay to do so. But it is also important to understand the content of the advertising itself, and this has been a key focus of this chapter. I have argued that Kenyans are predisposed to see the state as a rare source of material resources, both in the post-independence era of the 1960s and 1970s (Sklar 1979; Diamond 1987) and also in recent years, as neoliberal market reforms have swept Africa (Bratton, Mattes, and Gyimah-Boadi 2004). The aspirational nature of advertising campaigns therefore becomes a key feature affecting individual valuations of stock market participation, as potential investors come to associate share ownership with participation.

Approximately 90% of all investors in Kenya are lower-income, first-time market participants. This participation rate of lower-income actors in the Kenyan stock market bears a striking resemblance to participation in lotteries in developed countries, as studied by Beckert and Lutter (2009). These authors argue that individuals in vulnerable financial positions are increasingly willing to gamble on low-probability outcomes in the hope of improving their financial position. I argue that this willingness to accept risky, and in this case unfamiliar, behaviors and practices can inform our sociological conception of mechanisms that convey legitimacy on a practice, causing us to include in this conception signals that convey a high degree of aspirational valuation on products or practices previously unknown. In this way, the practice or the product itself need not be understood and accepted, but rather can be considered valuable based on the image or ideal that it represents (Beckert 2010). In Kenya, the ideal is class mobility in an environment where mobility is extremely hard to come by, as opposed to an ideal

based on consumption of luxury goods that convey a position in a social-status hierarchy, but the two examples are sufficiently similar theoretically. I would argue that investors are attracted to this ideal, rather than the practical reality it makes possible, by pointing to the extremely low levels of initial investment made by most investors. With these low initial investments, even very positive returns of 200% or more would not be sufficient to alter an investor's class position in Kenya. No amount of investing at the low levels enforced by the Kenyan state would provide access to the large homes or other symbols of material wealth featured in the advertising campaigns.

The argument presented here about how advertising campaigns legitimate share ownership to an unfamiliar population therefore has more in common with Preda's (2005) argument that promoting stockbrokers as a high-status group, or "men of honor," in the early centuries of investor capitalism in New York, London, and Paris helped institutionalize stock market participation. The trend in Kenya has been considerably more populist, with the state implementing policy reforms that allow the government to circumvent the negative influences of early Kenyan stockbrokers on mass participation and reach out directly to a public hungry for access to formal financial structures that were seen as exclusionary in the past but are now open to participation by the general public.

The larger question of whether or not a functional market has been created in Kenya remains to be seen. Certainly, a much larger amount of domestic capital has been mobilized in Kenya with the advent of mass retail investing, especially considering that the majority of stock exchange participation comes in the form of IPO share subscriptions. In this way, it is perhaps more useful to think of the Kenyan stock exchange, at least in terms of the masses of lower-income investors recruited in recent years, as the sale of a product (shares) to a consumer base

that resulted from a successful advertising campaign. But stock exchanges aren't thought of as product markets; they are considered to be arenas for exchange in which an asset is initially purchased not for consumption or possession, but rather as a store of value expected to be remobilized at some point in the future, something that requires selling the share and therefore providing liquidity to the market. However, other work by the author that investigates trading behavior by new investors after they enter the stock exchange suggests that the vast majority of the more than one million inexperienced investors recruited into the stock exchange have yet to transact their shares (Yenkey 2010). The material gains to be made by purchasing shares, the core ideal expressed in the advertisements, can only be realized by recognizing and acting on an appropriate time to sell those shares. The study presented here thus differs from previous work that investigates the construction of market actors as more active exchange agents (e.g. MacKenzie 2009). Elsewhere I suggest that initial share ownership is an ideal much more easily communicated than share trading, a more complex set of actions that requires a greater degree of market experience to negotiate (Yenkey 2010). Future research will need to focus on better understanding the type of market that arises from the constructive efforts described here.

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Table 1.1 Characteristics of Listing Firms

Firm name (in order of listing)	# new accounts created during IPO	% state ownership	Gross revenue for year prior to IPO (000s Ksh)	Ad budget for IPO (Ksh)	Avg. 3-yr. % change in gross profit	Minimum buy-in (Ksh)	% change share price prev. IPO at time of listing
KenGen	203,755	100	11,021,000	101,000,000	-28.1%	5,950	n/a
Scangroup	58,253	0	2,343,628	8,640,000	54.2%	5,225	207.1
Eveready	135,192	35	2,244,635	8,000,000	-3.0%	4,750	133.8
Access Kenya	21,325	0	577,881	3,210,000	9.5%	50,000	-9.4
Kenya Reinsurance	58,587	100	3,034,743	57,700,000	-24.2%	19,000	32.5
Safaricom	665,786	65	47,447,490	7,128,000	7.9%	5,000	47.5
Cooperative Trust Bank	15,220	100	8,275,856	68,018,417	49.1%	9,500	-36.8

Sources: Firm IPO prospectuses, NSE databases

Table 1.2 Correlations Between Number of New NSE Accounts Opened and Firm, IPO, and Market Attributes

% state ownership	0.58
Gross revenue 1 yr before listing	0.86
Total budgeted advertising expense for the IPO	0.68
Average % change in gross profit rate over three years prior to listing	-0.51
Value of minimum subscription allowed	-0.66
% change in share price of previous IPO shares	0.50

Table 1.3 "Psychographic Types" of Consumers, as Defined by Advertising Agency

Consumer Type	Characteristics
Mainstreamer	Conformist, conventional, passive, habitual; favors big and well-known brands.
Aspirer	Materialistic, affiliative, oriented to extrinsics such as image, appearance, persona; attractiveness is more important than quality of contents
Succeeder	Strong goal orientation, confidence, work ethic; supports status quo, stability; brand choice based on reward, prestige, "the very best"

Source: Advertising agency internal documents

Table 1.4 Four-Stage Advertising Strategy Used in Kenyan Privatizations

Phase	Goal
Awareness	Build familiarity with the company name and the industry/type of business conducted; Establish the function of the company: what it does; convey a high level of financial performance and large firm size
Pre-listing	Establish pride of ownership; present the IPO for the first time and communicate it as a way for the individual to share in the strength of the firm
Listing	Provide information on how and when to purchase shares: time frame of subscription period, application procedures, and locations where applications accepted
Countdown	Create a sense of urgency; inform potential investors that there is only a limited time to subscribe to shares; activate the feelings of demand created in previous phases

Source: Advertising agency internal documents

Figure 1.1 Awareness Phase Advertisement, Phase 1: Creating familiarity with the industry

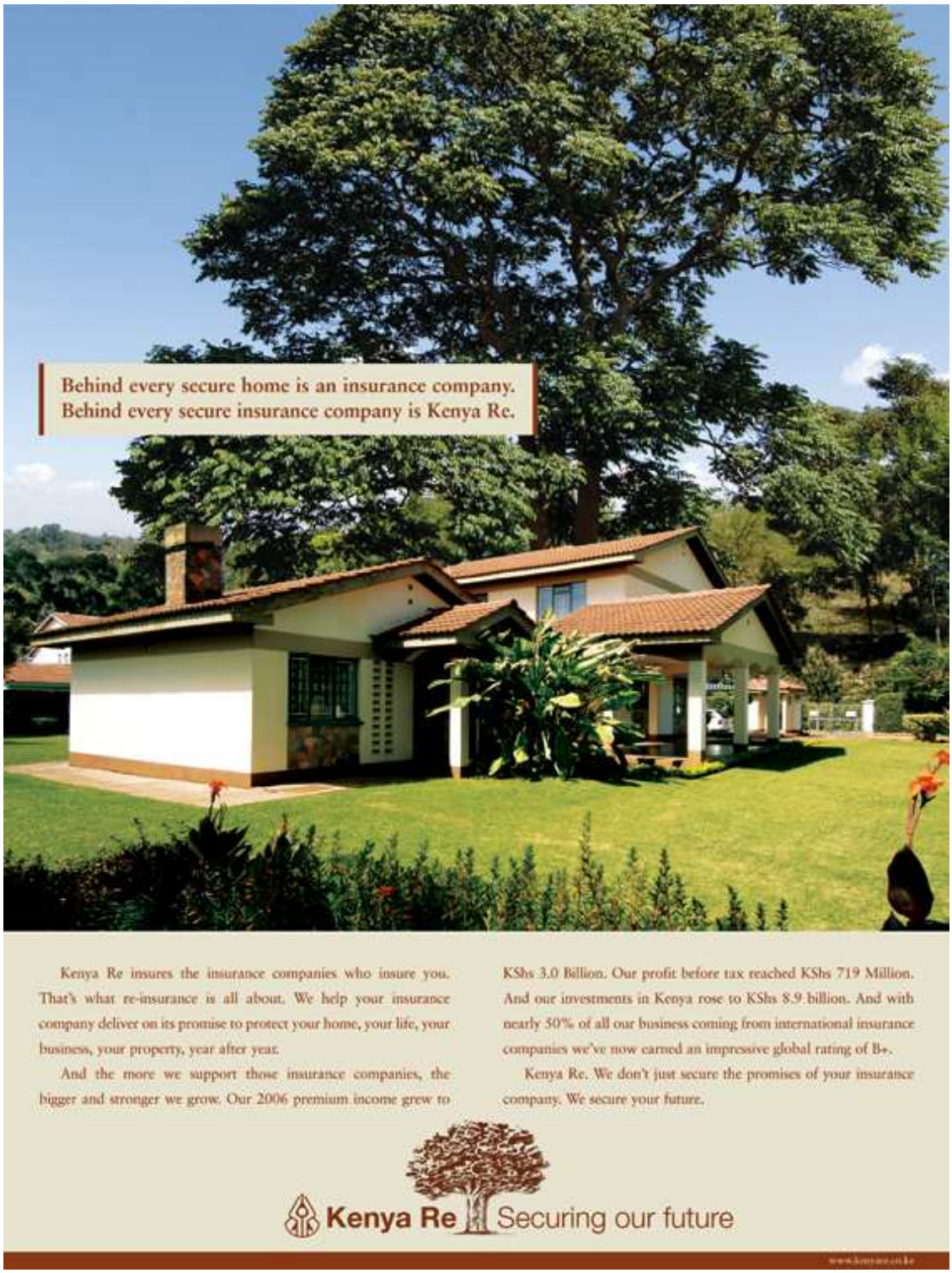
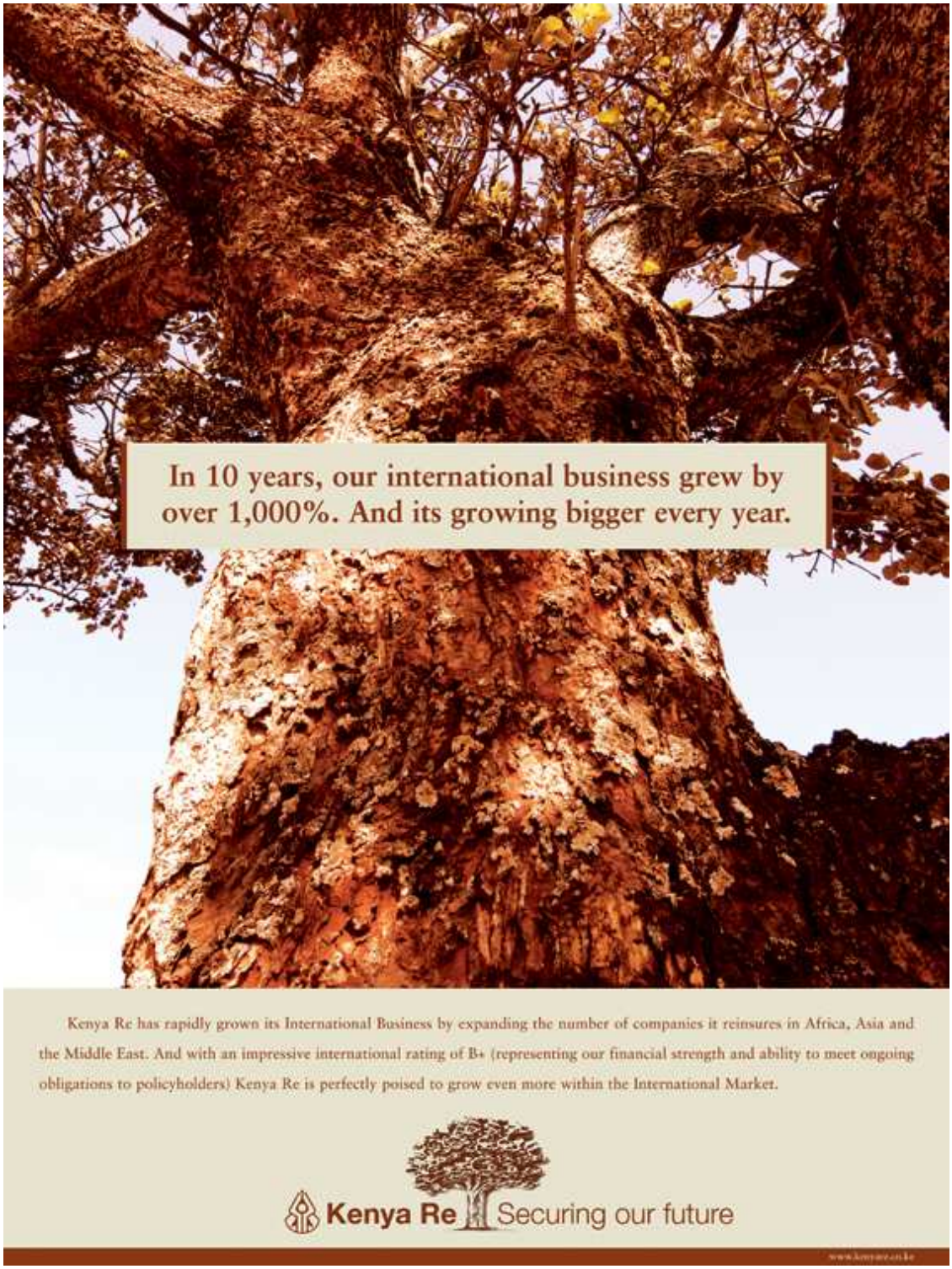


Figure 1.2 Awareness Phase Advertisements, Phase 2: Establishing firm performance



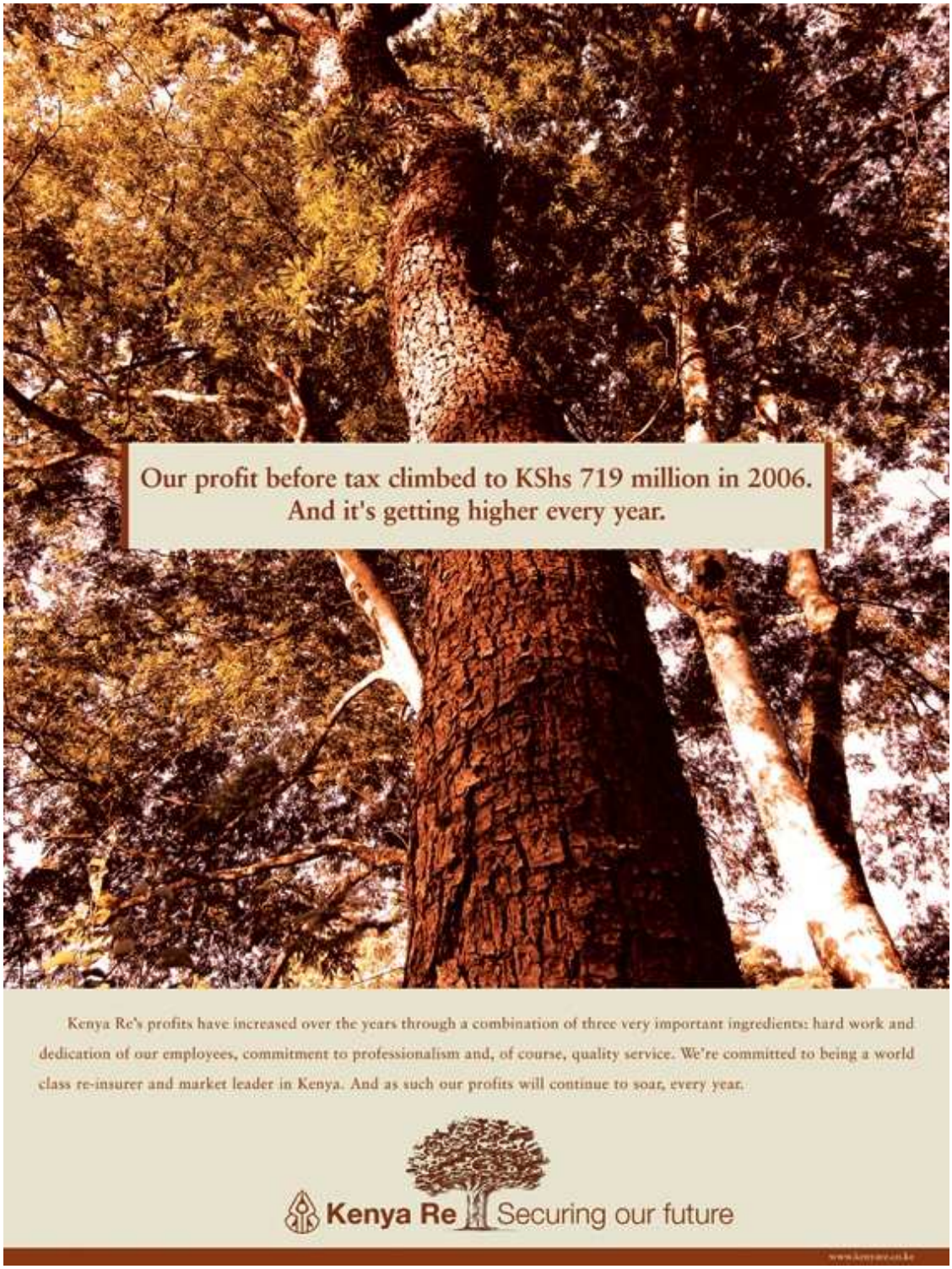

Our profit before tax climbed to KShs 719 million in 2006.
And it's getting higher every year.
Kenya Re's profits have increased over the years through a combination of three very important ingredients: hard work and dedication of our employees, commitment to professionalism and, of course, quality service. We're committed to being a world class re-insurer and market leader in Kenya. And as such our profits will continue to soar, every year.
Kenya Re
Securing our future

Figure 1.3 Countdown Phase Advertisement

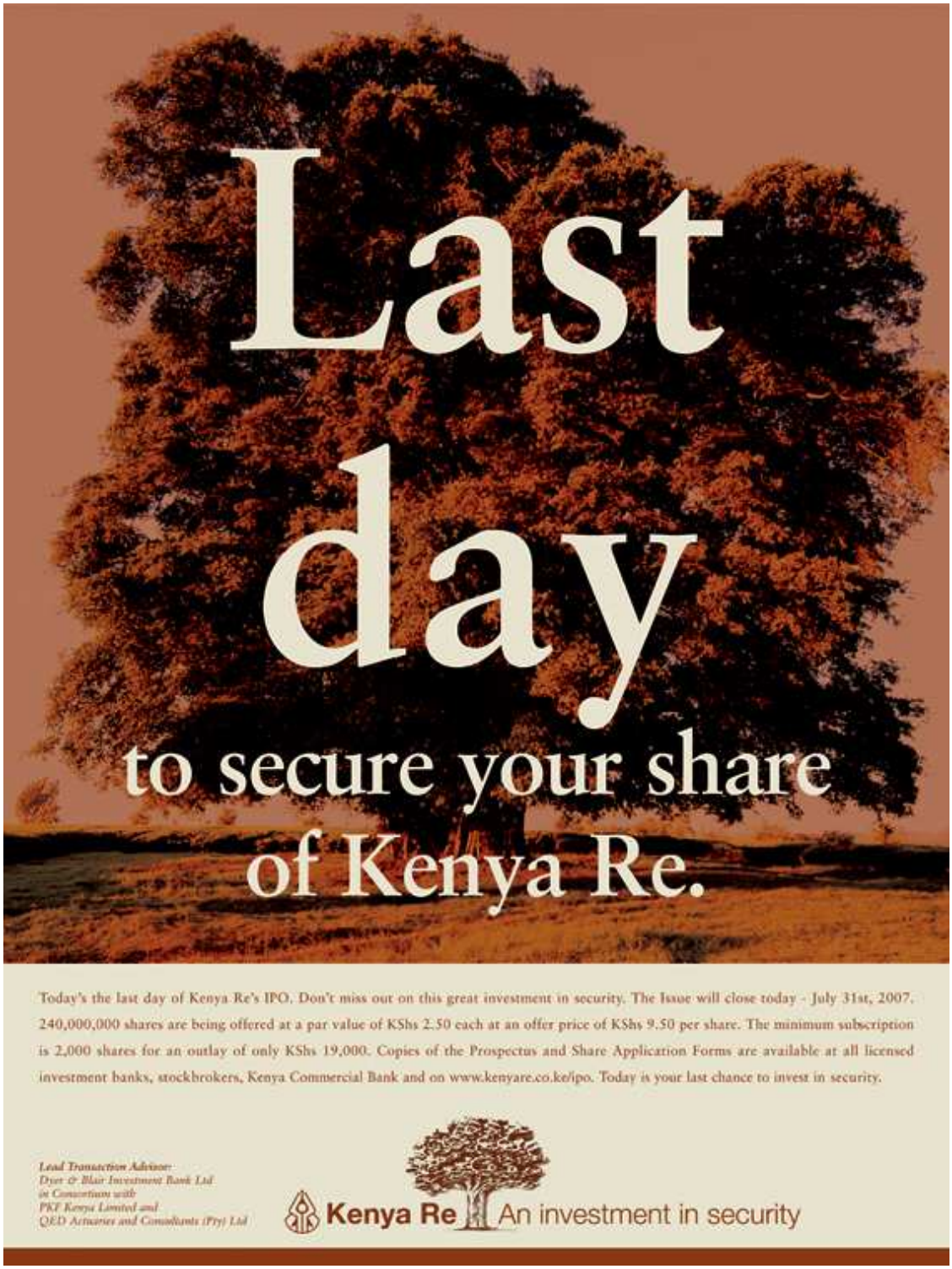


Figure 1.4 Scatterplot of IPO Advertising Budget Allocation and Total Regional Population

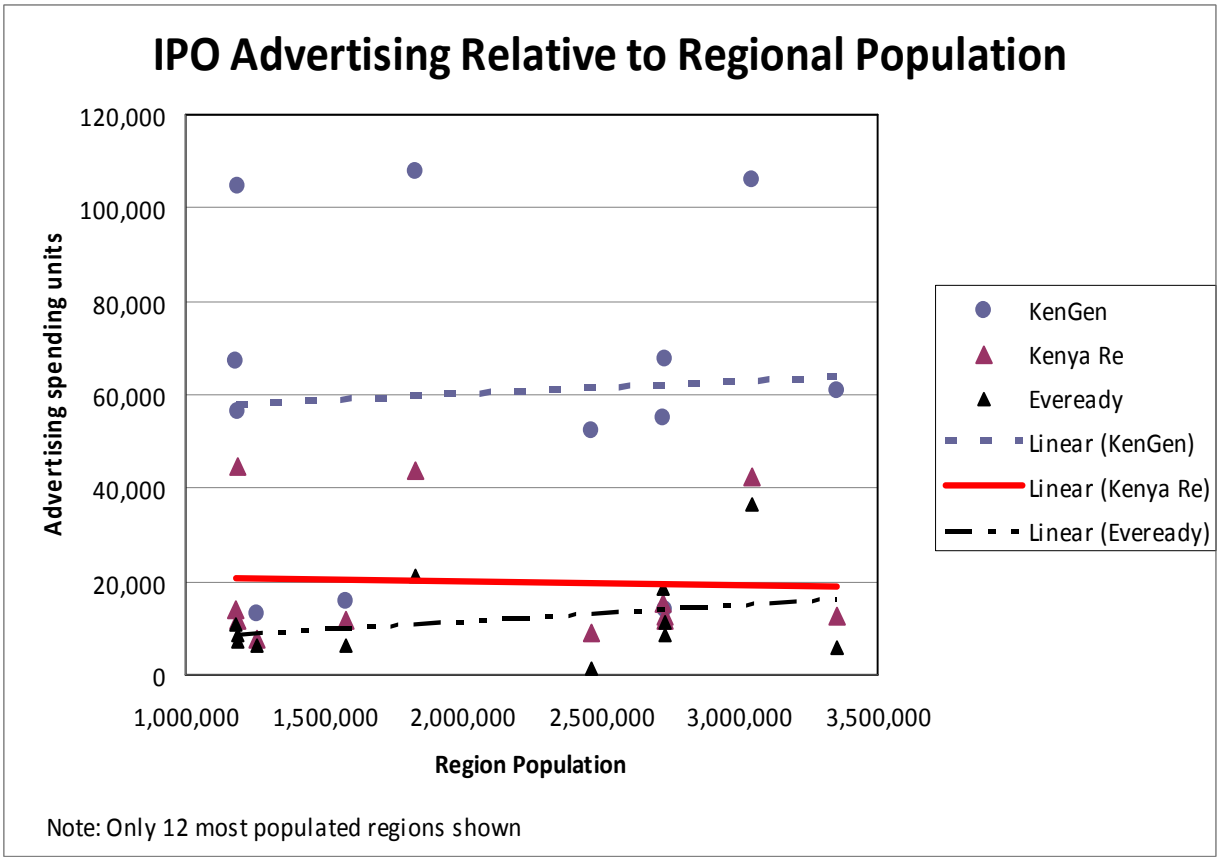
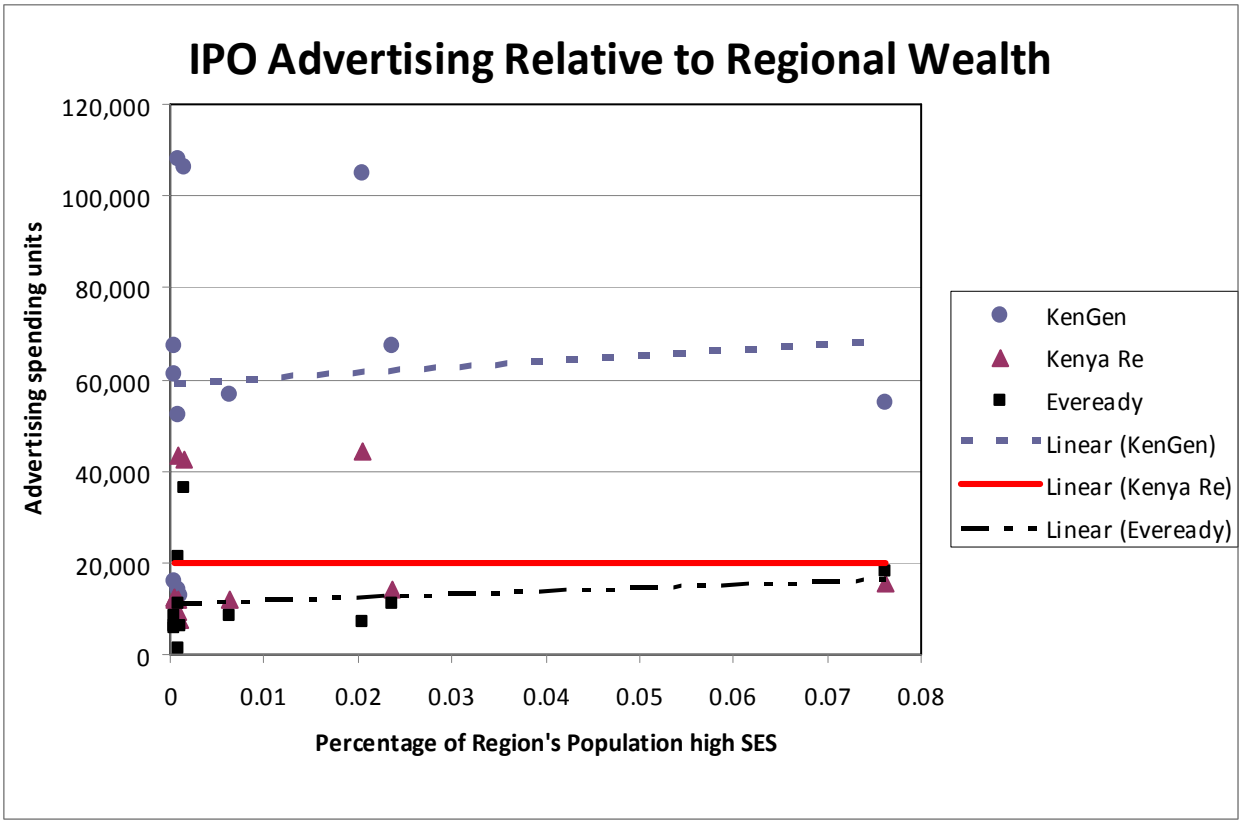


Figure 1.5 Scatterplot of IPO Advertising Budget Allocation and Percent of Region in Highest Socioeconomic Class



CHAPTER 2

BUILDING MARKETS IN AN ETHNICALLY FRACTIONALIZED SOCIETY: THE DIFFUSION OF INVESTOR PARTICIPATION IN KENYA'S NAIROBI STOCK EXCHANGE, 2006-08

Abstract

Despite low incomes, weak property rights, and low levels of financial literacy, and an ethnically diverse population, the number of domestic investors in Kenya's Nairobi Stock Exchange increased almost ten-fold to 1.3 million between early 2006 and late 2008, with 98% of all new investors entering the market via seven IPOs. This paper models the diffusion of the practice of shareholding through Kenyan society as a process of social contagion, with social networks situated in ethnic and geographic space carrying information about profitability of previous investments from current to potential investors. I consider the effect of geographically clustered ethnic groups on the national-level diffusion of this new economic practice in two ways. First, I consider how local levels of ethnic homogeneity affect a node's susceptibility to network contagion. Second, I consider how contagion flows through two distinct network spaces measured by geographic distance and ethnic similarity between existing and potential adopters of the practice. With access to the NSE's electronic trading platform as well as national survey data, I construct a unique database showing the timing of first share purchase, town of residence and profits earned on IPO investments for 83% of all Kenyan investors as well as town-level estimates of Kenya's ten primary ethnic populations. After controlling for IPO-specific effects and a comprehensive set of structural characteristics of each town, I find strong evidence that the effects of profits earned by geographically proximate peers is sharply reduced in ethnically homogeneous communities and that ethnic similarity between communities operate above and beyond geographic proximity between current and potential adopters as significant transmitters of material information.

Introduction

A growing sociological literature studies the global diffusion of market institutions, such as free trade zones (Duina 2006), independent central banks (Polillo and Guillén 2005), and the creation of stock exchanges in developing countries (Weber, Davis, and Lounsbury 2010). Henisz, Zelner, and Guillén (2005) analyze a range of market-oriented reforms (privatization, regulatory autonomy, and market liberalization) from the perspective of neoinstitutional and world systems theory, focusing on the combined influence of coercion, normative emulation, and competitive mimicry in state-level policy adoption. Weber, Davis, and Lounsbury (2010) employ a similar

theoretical lens to study the role played by coercion and mimicry but extend the scope of the inquiry to include the longer term performance of these nascent market institutions, finding that the number of listed firms and total market capitalization of newly established stock exchanges is negatively linked to creation of stock exchanges via coercive forces and positively related to normative emulation in the adoption process.

This paper extends our understanding of market building processes in two ways. First, I study the within-country diffusion of a new market practice, providing the first quantitative analysis of how participation in state-created neoliberal practices spreads through a society. Second, I extend social network analysis by considering how contagion spreads through networks characterized by ethnic diversity that manifests in localized ethnic clusters. Specifically, this paper studies the construction of a nascent financial market in a challenging environment by pursuing two specific questions about how profits earned by earlier investors is transmitted to potential investors: 1) Does local ethnic homogeneity reduce a community's susceptibility to network contagion?; 2) What are the relative effects of a contagion transmitted through networks based in geographic versus ethnic space?

Diffusion scholars and organization theorists have long studied how performance of previous adopters influences later adoption (e.g. Rao 1994; Conell and Cohn 1995) and how shared traits, including cultural similarities, between network contacts further influences the spread of a practice (e.g. Lincoln, Gerlach and Takahashi 1992; Greve 1998; Terlaak and Gong 2008). Many of these studies implicitly address search processes, where actors seeking solutions to known problems place a higher value on information gathered from similar others (Strang and Meyer 1994). This search process has been especially explored in terms of cultural similarities, with several researchers studying how networks of co-ethnics aid the search process for

immigrant entrepreneurs (Aldrich and Waldinger 1990; Portes and Sensenbrenner 1993; Kalnins and Chung 2006). This paper takes a different approach to the role played by ethnic ties in the diffusion of information by studying how nodes in a network may be insulated from understanding new opportunities available in the economy as a result of being located in ethnically homogeneous geographic areas clusters or being situated a greater distance from ethnically similar others. Instead of assuming that actors seek information about investing, I assume that potential investors in developing countries are unaware of the practice and model the extent to which they are introduced to it and convinced that it is potentially beneficial based on attributes of their local environment and distance from ethnically similar others.

My theoretical approach similarly expands the development economics literature on ethnic fractionalization. Scholars in this literature study the effects of ethnic diversity on economic development, focusing on the idea that ethnic differences retard support for public spending programs that would benefit the country to a greater degree than private spending (see Posner 2004 for a comprehensive review; Alesina and La Ferrera 2005; Easterly, Ritzen, and Woolcock 2006). Methodologically, I advance this literature in the same way as the sociological literature on the state-level diffusion of neoliberal reform policies by considering the effects of within-country concentrations of ethnic populations on market formation. Studying local participation in imported institutional arrangements is sympathetic to Easterly's (2008) argument that the successful implementation of imported policies often depends on bottom-up receptiveness by the domestic population to newly created practices. The policy implications of understanding the recruitment of new investors can scarcely be underestimated, as policy analysts have noted that many emerging stock exchanges fail to mobilize and allocate nascent capital and create more liquid trading environments in large part because they fail to attract a

sufficient level of investor participation (Bishop 1988; Sing 1997; Yartey and Adjasi 2007). Similarly, the need to mobilize domestic capital rather than rely on attracting foreign capital is evidenced by the fact that most emerging markets receive only slight levels of foreign capital while a few, larger emerging markets attract the lion's share of foreign investment (Moss, Ramachandran and Standley 2007; Kenny and Moss 1998).

The paper proceeds as follows. The next section provides a description of the empirical setting in Kenya. The section that follows develops two research questions that address how material information about the profits earned by previous investors diffuses to potential investors, considering how levels of local ethnic homogeneity may insulate a community from network influence and how information might travel differently through networks situated in geographic proximity and ethnic similarity. A section describing the unique data and methods used to explore these questions are followed by results of the quantitative analysis. A concluding discussion explores theoretical contributions for diffusion theorists and policy makers as well as generalizability of the findings and future research directions.

Empirical Setting: The Rise of Retail Shareholding in Kenya

The Nairobi Stock Exchange (NSE) was established in 1954 by British colonial businessmen who sold shares of their Kenya-based enterprises to a select group of fellow colonialists (for a more complete history of the NSE see Kimura and Amoro 1999; Ngugi 2003). African Kenyans were prohibited from participating in the exchange until after independence in 1963, but neither the end of colonial constraints nor a consultancy by the United States Agency for International Development (USAID) to modernize the exchange in the late 1980s succeeded in stimulating shareholding among average Kenyans. In fact, the NSE was called "a stock exchange in name

only" by the head of the USAID delegation in 1988, who concluded that the lack of competition among buyers and the low numbers of total investors distorted share prices, reduced trading volume and liquidity, and ultimately inhibited the NSE from mobilizing individual savings (Bishop 1988).

Figure 2.1 shows the total number of shareholders, the timing of all initial public offers, and the performance of the exchange as measured by the NSE20 Index since 1980. Despite numerous listings of new firms and a world-best rate of return of 187% in 1994, the total number of shareholders in the NSE remained constant at approximately 50,000 after the end of USAID's involvement in 1990 until the privatization of Kenya Airways in 1996 which doubled the number of investors to 100,000.[4]

Figure 2.1

Prior to 2006, newly floated shares on the NSE were priced relatively high and sold in large lots to a small group of pension funds, government officials, and stockbrokers serving Kenyan elites (Ngugi 2003). Barriers to entry for small-scale shareholders were directly addressed in the Privatization Act of 2005, passed by the Kenyan Parliament in that year as part of a larger package of economic liberalization reforms.[5] With the goal of better utilizing the domestic stock exchange to mobilize nascent domestic capital and increase liquidity in the

[4] Few formal records of the numbers of investors in each firm exist prior to 2004. The numbers of shareholders prior to that year are estimated based on accounts found in the annual reports of the NSE, the Capital Markets Authority, and estimates provided by Kenyan fund managers.

[5] The passage of the Privatization Act of 2005 followed notable other events in Kenyan politics, including the election of a pro-business administration in 2002 and the publication of the Ndungu Land Report in 2004 that called into question the legal ownership status of a large amount of land. Both of these represent shifts in the Kenyan political landscape in the lead up to the growth in participation on the NSE. A more complete discussion of these events is beyond the scope of this paper, which focuses on variation in adoption of shareholding given these political circumstances.

market by recruiting more investors, the Act formally required that any firm listing on the NSE must make the floated shares available to at least 1,000 shareholders. The Act also required regulatory approval of key features of each initial public offer (IPO), including the initial share price to be charged, the minimum number of shares to be purchased by each IPO investor, and the allocation of IPO shares across retail and institutional investors and employees of the listing firm. With share prices fixed, minimum buy-ins held low, and allocation policies controlled by the regulator, the state effectively forced listing firms to allocate a high percentage of IPO shares to smaller retail investors who could buy in affordable lots.[6]

The state quickly followed the passage of the Privatization Act in 2005 with an aggressive privatization program, in which several select state-owned and private firms were listed on the stock exchange. The use of privatization IPOs to deepen capital markets, both in terms of the number of total investors and the number of listed firms, is a common strategy in developing countries, and almost all emerging markets make use of some form of politicized offer terms (Jones et al 1999; Boutchkova and Megginson 2000). The Privatization Act of 2005 clearly served as a catalyst in attracting more investors to the market, as the total number of investors on the NSE increased ten-fold between mid-2006 and late 2008.

Although the long term trend of adopting the practice of shareholding seen in Figure 2.1 resembles the s-shaped diffusion curve associated with exponential hazard rates resulting from the cascading effects of contagion by previous adopters (Schelling, 1978; Coleman, Katz and Menzel 1966; Rossman 2010), Figure 2.2 shows that adoption occurs in discrete, punctuated periods followed by longer spells of dormancy. These discrete periods are initial public offers of newly listing firms, and more than 98% of all new investors enter the NSE via subscription to an

[6] The use of such politicized offer terms is common in emerging markets, where states adopt listing requirements that incentivize participation by retail investors. For a more in-depth review of the practice, see Jones et al. (1999).

IPO. Figure 2.2 also shows that IPOs differ significantly in their ability to attract new investors. New investors do not seem to be increasingly recruited via cascade effects of prior adopters, as evidenced by the fact that the first, third, and sixth IPOs attract the most new investors. Other IPOs recruit relatively few new investors, suggesting that characteristics of IPO events should be a prominent part of an investigation of the recruitment of new investors in Kenya.

Figure 2.2

Figure 2.3 shows two maps marking the locations of Kenyan investors who owned shares prior to the passage of the Privatization Act in 2005 and the locations investors as of December 2008; the number of investors in each town is represented by dots of increasing size. Figure 2.3 demonstrates that the growth of shareholding from 140,000 investors in late 2005 to 1.4 million at the end of 2008 was accomplished mostly by a deepening participation rates in a relatively small number of towns rather than expanding the number of locations in which investors live; a 900% growth in the practice of shareholding was accompanied by a 54% increase in the number of unique towns in which investors reside. Figure 2.3 therefore demonstrates strong a priori reasons to approach the spread of retail shareholding as a contagion process.

Figure 2.3

For a number of reasons, Kenya is an unlikely setting for such an explosion of retail investing activity. Per capita income in Kenya in 2006 was just below the international poverty line of US$2 per day, while real average earnings declined in 2005 and held steady in 2006 due

to high inflation (Kenya NBS 2007: 11, 89). At the start of the boom in retail investing in 2006, less than 25% of the total population made use of any formal sector financial product such as a bank account, line of consumer credit, insurance policy or pension fund (FSD-Kenya 2006).

Institutional economists have long argued that the strength of a country's property rights regime is a key indicator of participation in financial markets (La Porta, Lopez-de-Salinas, and Shleifer 1997). If this argument holds in Kenya we would expect low levels of participation in the NSE. The World Bank's 2009 Investor Protection Index ranks the Kenyan state as one of the weaker protectors of investors' property rights, ranking 81st internationally. In their daily activities, average Kenyans have an even worse experience with Kenya's various rent seeking bureaucracies. Ranking 150th worldwide in Transparency International's 2007 Bribery Perception Index, 87% of Kenyans reported paying bribes for basic services.

In addition to the formal institutions, informal social institutions are also a possible source of friction for stimulating collective participation in Kenya's emerging stock exchange. Of particular interest in this area is the degree of ethnic heterogeneity, as Kenya is home to 42 distinct tribal ethnicities and a history of troubled relations between them. The failed 2007 presidential election is a stark example of the schisms between tribal groups, as the largest and most economically dominant tribe was accused by a coalition of smaller tribes of rigging the election, resulting in a near civil war in which more than 1,300 people were killed. This tragic episode is currently the focus of an International Criminal Court trial, where six leaders from several tribal groups are charged with crimes against humanity for coordinating and funding attacks against members of rival tribes. At the root of these tensions is access to and possession of economic resources, a key element found by sociologists to determining rates of ethnic entrepreneurship (Aldrich and Waldinger 1990). Economists have studied the effects of ethnic

heterogeneity on economic development, finding that high levels of ethnic fractionalization negatively affect domestic economic growth (Easterly and Levine 1997), as well as provision of public goods required for development (Alesina and La Ferrara 2005).

Contagion in Geographic and Ethnic Networks

Paradoxically, sociologists and organization theorists might predict that the above litany of institutional weaknesses might in fact encourage Kenyans to see share ownership as a legitimate activity, so long as it is perceived to be compatible with individual goals of material gain (Rogers 2003). Yenkey (forthcoming) argues that shareholding in Kenya is framed as an aspirational activity, with share ownership advertised as a rare opportunity to experience class mobility. The deleterious effects of low incomes and high levels of corruption, for example, could be outweighed by desires to take advantage of rare opportunities to increase wealth, even if those opportunities are not well understood or inconsistent with prevailing practices.

In this section, I outline two research questions that address the role played by intrinsic characteristics of towns, proximity to previous investors, and how ethnic homogeneity mediates social contagion.

My focus on individual-level, demand side adoption of shareholding leads me away from world systems-oriented mechanisms of coercion, emulation, and mimicry used to understand state-level adoption of neoliberal institutions (e.g. Henisz, Zlener and Guillén 2005; Weber, Davis and Lounsbury 2010) and toward a focus on social learning between individuals linked by network structures. Learning from the experiences of previous adopters is understood to be a rational process, allowing potential adopters to judge the efficacy of new, uncertain practices based on the experiences of prior adopters (Banerjee 1992; Strang and Meyer 1993). For

example, Rao (1994) demonstrates that early U.S. automobile manufacturers recruited more consumers as a result of their vehicle's strong results in performance trials. Similarly, Conell and Cohn (1995) show an increased incidence of strikes among French coal miners following earlier strikes that achieved workers' goals. Holden's (1986) study of the likelihood of airline hijackings based on the perceived success of earlier strikes and hijackings comes to similar conclusion. Hedstrom (1998) labels this behavior "rational imitation," whereby actors mimic earlier actions of others when the behavior is seen to fit her interests.

Figure 2.4 shows indexed share prices (listing price = 100) for each of the first six IPOs at the time of the start of the next IPO. Share prices are shown only so far as the number of trading days until the next IPO subscription period begins, as shown on the horizontal axis. Price gains in these recent Kenyan IPOs range from a high of 330% to a low of -45%. Shares in two of the six IPOs trade at less than their listing price at the start of the next IPO, and there is a high degree of variation across the four that trade in positive territory at the start of the next IPO.

Figure 2.4 about here

Susceptibility to learning from proximate others

These profits experienced by earlier investors constitute the "infectious" material information that is to be spread to potential adopters (Strang and Tuma 1993). The relevant question, however, is how does this information spread through a population that is unfamiliar with the practice? Studies of the spread of practices based on physical proximity have long been a part of diffusion research (e.g. Hagerstrand 1967; Spilerman 1970; Land, Deane and Blau 1991; Hedstrom 1994). Network scholars continue to incorporate the effects of physical proximity ,

highlighted by the formation of long distance ties between venture capital firms (Sorenson and Stuart 2001) and the geographic distribution of new firms related to IPO events (Stuart and Sorenson 2003). To borrow Podolny's (2001) metaphor, geographic proximity might serve as a pipe through which information about the financial benefits of share ownership travel through the society. The first research question I studies how local ethnic homogeneity might serve as a blockage in these pipes, restricting the flow of material information to potential investors.

Economists and political scientists have recently addressed similar questions in studies of the effects of ethnic fractionalization on economic development in emerging market countries. Here, researchers find that social cleavages resulting from ethnic diversity lead to high degrees of localized orientation, such that preferences form for private, local spending projects to the detriment of more national-level, collective goods that facilitate economic development but are seen as also benefitting rival ethnic groups (see Easterly 2001 for a review). Alesina and La Ferrera (2005) posit that countries with ethnically fragmented populations will increasingly prefer private, localized consumption orientations rather than public, market-oriented systems. Collier (2000) finds a similar outcome, with ethnic heterogeneity resulting in a wider variation in preference for public goods, resulting in lower ability of the state to satisfy all constituents and therefore providing fewer public goods. Easterly, Ritzen, and Woolcock (2006) investigate the effects of social cohesion on the formation of more stable institutions that facilitate economic growth, defining social cohesion in terms of cleavages along which divisions within a society might emerge, such as the ethnic divisions that characterize Kenyan society.

The literature on ethnic fractionalization rests largely on cross-national, comparative studies of macro-level outcomes predicted by national measures of ethnic diversity. The causal mechanism posited by these authors, however, is cohesion within ethnic groups, and it is this

cohesion that results in political support for local spending projects. Incorporating sociological insights on group-level processes has the potential to deepen our theoretical understanding of this process by investigating geographically clustered ethnic groups and their likelihood of being recruited into a collective market structure as a result of susceptibility to network influence. If we consider the extent to which localized groups are attuned to the world around them, it is possible to theorize about how locally homogeneous groups are susceptible to network influence.

For example, Merton (1949) discussed the different world views of two groups, locals and cosmopolitans, with locals being town residents that attend mainly to information and activities occurring within the community and cosmopolitans regarding themselves to be more "citizens of the world," with a strong interest in learning from external peers.

A causal mechanism underlying Merton's idea of locals and cosmopolitans is later postulated by network theorists, with Coleman (1988, 1990) stipulating that closed social networks act as a source of productive social capital by creating a dense, local network in which information is more readily available and monitoring is more effective, thus increasing trust (for a more comprehensive review, see Burt 2000). In this way, a denser local network could result in higher proportions of locals, producing a negative effect on market formation due to network closure stimulated by highly homogeneous ethnic communities that are less susceptible to outside influence.

Research Question 1: Are communities characterized by higher degrees of ethnic homogeneity less susceptible to the contagious influence of profits earned by geographically proximate peers, and thus less likely to contribute more new investors into the market?

Susceptibility to network-based learning

Strang and Tuma (1993) discuss how shared attributes between previous and potential adopters affect susceptibility to network-based contagion, and Strang and Meyer (1993) theorize that diffusion should face less resistance between actors who share a similar culture. Aldrich and Waldinger (1990) find that social networks between co-ethnics increases the flow of information about resources required for business ventures, ostensibly reducing the reliance of a dense ethnic network of sufficient size on peer provided information. Similarly, Portes and Sensenbrenner (1994) argue that immigrants make use of ethnic networks to access information about job opportunities, and Kalnins and Chung (2006) find the same in their study of immigrant hotel entrepreneurs. Organizational scholars have produced a range of results demonstrating that managers engage in vicarious learning, whereby they consider not just the outcomes experienced by other firms but also the traits of the previous adopter as a way of more precisely estimating their own likelihood of success, as success by similar others is considered more relevant than the experiences of dissimilar others (Terlaak and Gong 2008; Greve 1998). While organization theory provides a tractable starting point for studying the role of ethnicity in social networks, these literatures are built around questions about search processes; often the research setting is one in which actors encounter problems, material or perceived, and they survey similar others to find suitable solutions. While information gathered may be evaluated relative to perceived shared traits between actors, the search process is more or less rationally agentic from the beginning.

The recruitment of investors into a nascent market, however, is more likely to be a case where uninformed potential investors are made aware of the advantages or disadvantages of a newly available practice by previous adopters without themselves searching out information about the practice. Even after the dramatic rise in participation in the national stock exchange in

the three previous years, half of all Kenyans reported having never heard of the Nairobi Stock Exchange in 2008 (FSD Kenya 2009). I argue that adjudicating the performance of earlier profits experienced in the Kenyan stock market is not a search process engaged in by actors seeking new opportunities. Instead, news of earlier profits comes to actors via social linkages, and a deep sociological literature provides reasons how these linkages arise and their ability to serve as effective "pipes."

Homophily has long been the causal mechanism for network tie formation (see McPherson, Smith-Lovin, and Cook for a review), with physical proximity and ethnic similarity being two of the most powerful homophily-inducing traits. Ethnicity, and more specifically race, has been found to influence a range of ties, including friendships (Shrum et al 1988), confidants and discussion partners (Marsden 1987, 1988; Schneider et al 1997), and marriage (Kalmijn 1988). Physical proximity is also a foundational attribute affecting tie formation (Zipf 1947; Gans 1968; see McPherson, Smith-Lovin, and Cook for a review). This literature provides a robust causal mechanism for understanding how actors come to form ties, through which information and influence might flow. I am not, however, able to measure the extent of ties between members of different ethnic groups in Kenya, and therefore I cannot stipulate a precise causal mechanism that explains why the influence of profits earned by members of other ethnic groups might be stronger or weaker.

No previous research that I am aware of considers the simultaneous contributions of physical proximity and ethnic similarity in the dissemination of material information. Without a priori reasons to expect one type of network link to take primacy over another, I let the data provide quantification of the contribution of ethnic similarity versus geographic proximity in the diffusion of material information on past profits and the recruitment of new investors into this

market. The purpose of this paper is not to predict participation in the formal economy by any one particular ethnic group, despite evidence presented above that such groups do exist in Kenya in the form of unique tribes. Instead, I make use of the ethnic diversity in Kenya to study the extent to which ethnic dissimilarity operates similar to geographic distance in the dissemination of material information and therefore market construction.

Research Question 2: What are the relative contributions of networks measured as both geographic and ethnic distance in recruiting new investors?

Controls for intrinsic characteristics of investors and firms

Although not hypothesized, a wide range of structural elements have been shown to contribute to capital market participation and therefore must be controlled for if the influence of ethnic and geographic proximity is to be reliably studied. One of the first control measures must be the financial ability to purchase shares. A large body of research in organizational literature demonstrates that willingness to adopt risky innovations increases when an actor performs under the level to which they aspire (Kahneman and Tversky 1979; Greve 1998), while managers whose firms exceed expectations exhibit more risk adverse behaviors (March and Shapira 1987). At the individual level, sociologists have long shown that economically disadvantaged groups are increasingly risk loving in games of chance precisely because the activity is seen as a rare way to release pressures that accrue to lower social classes as well as providing an opportunity structure in which economic resources may be accrued (Devereux 1949; Frey 1984). The theoretical argument that lower income groups participate in national lotteries for these reasons has been empirically verified (King 1985; Beckert and Lutter 2009). These bodies of work

suggest that low income areas in Kenya may be more or less likely to participate in a new practice seen to be both risky but also potentially profitable.

Related to levels of individual income, research has linked prior experience with formal financial products to higher levels of financial literacy (Braunstein and Welch 2002), and lower levels of financial literacy to lower participation rates in stock markets in the U.S. (van Rooij, Lusardi, and Alessie 2007). Earlier work by anthropologists, however, suggests that populations in developing countries demonstrate high degrees of sophistication in informal financial arrangements (Guyer 1985) and in abilities to construct market exchange arrangements (Ensminger 1996), suggesting that a lack of formal financial sector participation might not be as much of a hindrance to shareholding as might be expected by observers unfamiliar with the emerging market context.

Net of the effects of income and experiences with other formal financial technologies, it is common for ethnic groups to have differing access to resources that foster participation in the formal sector economy (Aldrich and Waldinger 1990). In Kenya, the Kikuyu are the largest of 42 tribes, comprising 21% of the total population. Members of this tribe were favored by British colonial business interests due to a perception of their stronger sense of Western business ideals (Wrong 2008), and the Kikuyu inherited many of the economic and political institutions from the British at the time of independence in 1963 (Himbara 1994). The Kikuyu continue to be regarded as the most entrepreneurial tribe in Kenya (Ndemo 2005) and have the strongest presence in formal economy. 596 firms with membership in the Kenya Association of Manufacturers in 2007, 25 are headquartered in districts with majority Luhya populations, 10 are headquartered in districts with majority Luo populations, and the remaining 561 are in districts where Kikuyu comprise the dominant ethnic population. These disparities stand in a stark contrast to the

relatively close population sizes, with the the Kikuyu, Luhya, and Luo representing approximately 18, 15, and 13% of the total population, respectively.

In addition to attributes of potential investors, characteristics of listing firms may account for a large proportion of investor demand. Figure 2.2 above shows that the three IPOs that recruit the largest number of new investors were privatizations or divestitures of state owned firms. Privatization events are often responsible for recruiting the largest numbers of new investors in emerging markets (Boutchkova and Megginson 2000; Lieberman and Kirkness 1988). Public desire to purchase shares in divested state-owned firms is related to earlier work by political scientists that suggests that post-independence African populations are likely to see ties to the state as a source of wealth and class mobility (Sklar 1979; Diamond 1987), a feature that Yenkey (forthcoming) argues increases demand for IPO shares in privatizing parastatals.

Firms listing on the NSE also vary considerably in their use of advertising campaigns to recruit investors during IPOs. A number of studies demonstrate the effects of advertising campaigns on capital market performance suggest that advertising plays a strong role in generating interest in and returns to firms during initial public offers. Grullon, Kanatas, and Weston (2004) argue that product market advertising has a positive spillover into firms' capital market operations. Similarly, Pollock and Rindova (2003) study the media as an "institutional infomediary" that "render some firms more comprehensible and desirable, and therefore more legitimate" (p. 631) in the eyes of investors. Positive effects of media coverage include higher initial share prices and increased turnover in early secondary trading.

Data and Methods

I study the above research questions using a unique, individual-level dataset showing the timing of first share purchase for all 1.4 million Kenyan domestic investors. The NSE migrated to an electronic platform in November 2004, and since that time all trades have been routed through a central server; there is no over the counter market. Since the inception of the electronic platform all trading activities, including IPO share subscriptions, require an investor to have an electronic account. Kenyan law stipulates that only one account is allowed for each individual or company, enforced by the requirement of providing a national identity card or articles of incorporation for individuals and companies, respectively. Therefore, I assume that each electronic account represents a unique investor. Access to the NSE's electronic platform shows not only the timing of first share ownership for each investor but also all subsequent share trades as well as individual background data for each investor including town of residence. 83% of NSE accounts contain a verifiable town of residence, and the 17% whose location is unverified show no patterns suggesting self-reporting bias. Based on these towns of residence, I merge town-level estimates of ethnic populations and a range of town-level control variables gleaned from three recent nationally representative surveys: the 2005 Kenya Household Integrated Budget Survey (KBS 2006) and the 2006 and 2009 waves of the FinAccess Survey, a survey conducted by Financial Sector Deepening-Kenya in partnership with the World Bank that collects information about the use of a wide range of formal and informal financial products.

Geographic and ethnic proximity networks

The analysis makes use of two distinct proximity measures, one situated in physical space and one dependant on ethnic similarities between towns. Geographic distance between towns,

measured in kilometers, is computed automatically using ArcGIS software. Ethnic similarity between towns is measured using Lieberson's (1969) measure of qualitative variation:

$$Ethnic\ Distance = 1 - (\sum_{z=1}^{k=10}(p_{iz} * p_{jz}) \quad (1)$$

Where there are $k = 10$ possible ethno-linguistic groups in each town and p_{iz} represents the proportion of town *I* that belongs to ethno-linguistic group *z* and p_{jz} represents *z*'s population in town *j*. Equation 1 produces a single measure of ethnic similarity between all pairs of towns that is the probability that if you choose one member of each town at random, the pair will be from different ethnic groups. My method for estimating the ethnic composition of each town is described below.

Following standard practice in network analysis (Burt 1987; Burt and Carlton 1989; Bothner 2003), I assign a weight to all alters according to their proportional distance or dissimilarity , with weights of all alters to a given ego summing to unity:

$$w_{ij} = \frac{[\max(d_{ik}) - d_{ij})]^v}{\sum_{k=1}^{K=565}[\max(d_{ik}) - d_{ij})]^v} \quad (2)$$

K is the set of all 563 towns in the sample, so that $\max(d_{ik})$ is the ego-defined maximum distance from town *i* to any other town in the sample and $d_{ij}$is the distance from ego to a particular alter within the set *K*. v is a user-defined term affecting the relative weight of more spatially proximate alters. Values for v much larger than one signify that ego is influenced primarily by closely proximate alters, while fractional values for v suggest that ego is influenced by contact with a wide range of alters, regardless of proximity. Following Burt (1987), I

recognize that it is not knowable at the outset the degree to which ego receives information from alters of various proximity; therefore, it is unclear what values of v are appropriate in this setting. Models are estimated using a range of V values and I discuss empirical evidence supporting higher values of v.

Dependent Variable

Number of new investors. Because I do not have complete background data for each investor, I shift the unit of analysis to the town-IPO event. The dependent variable is a count of new investors in each town whose first ownership of shares occurs as a result of subscribing for shares in each IPO that has taken place on the NSE since the passage of the Privatization Act in 2005. More than 98% of all new investors first enter the market via a subscription to one of these seven IPOs. The subscription period for each IPO varies from as short as ten days to as long as five weeks, during which time all investors visit the office of an intermediary (a stock brokerage or licensed agent thereof) and pays for all subscribed shares in advance. If it is the first time an individual is buying shares, she must open an NSE account. I measure the count of new investors as those that receive shares for the first time rather than account openings because there are approximately 120,000 CDSC accounts that were opened but which never took a deposit of a single share. The dependent variable does not distinguish between investors according to size of initial investment or registration as individuals or companies.

Explanatory Variables

Town profit. Performance of previous investments is a town-level measure of the total, nominal value of paper profits earned on investments made in the previous IPO. Profits are calculated

based on share prices at the end of trading on the day prior to the start of the subscription period for the next IPO and are expressed in tens of millions of Kenyan Shillings. Any investor who sold her shares prior to that time is assigned the selling share price as the basis for calculating the return.

Profits of geographic and ethnic peers. Profits earned in all other towns in the previous IPO are constructed as a single measure of the sum of profits made in all other towns weighted according to their proportional proximity to ego using equation (2) above:

$$Peer\ \pi_{ik(t-1)} = \sum_{i=1}^{k=562} w_{ij}\pi_{j(t-1)} \qquad (3)$$

Where *k* represents a single measure on the set of all alter towns to any ego *i*, comprised of *J*=562 other towns in the sample.

Town's ethnic composition. The proportion of each town's population belonging to each of ten ethno-linguistic groups is estimated from district-level aggregates taken from the 2006 and 2009 waves of the FinAccess Survey. Respondents choose to complete the survey in one of the ten most common languages and tribal dialects used in Kenya. Survey administrators note the language used and the proportions of respondents using each language are then aggregated to the district-level. I estimate town-level measures according to the scheme described below.

Ethnic homogeneity. Local ethnic homogeneity is measured as a location quotient, defined as the local proportion of a given ethnic group relative to its proportion of the national population (Brown and Chung 2006).[7]

Control variables

Advertising exposure. Data on exposure to IPO advertising campaigns was obtained from a Nairobi-based market research firm that tracks advertisements on all radio and television stations and print media outlets. Firm researchers note the time of day, duration, and other features of each advertisement in each media outlet and use those characteristics to estimate its retail value. Actual price paid for each ad is not known (larger advertisers may negotiate bulk prices for advertisements, for example), but the estimated retail price is a better measure of advertising exposure because it provides a standardized measure of the volume of expected advertising exposure for residents of each town. Estimated retail price of all advertisements for each of the seven IPO firms over a four month period prior to listing are available for each of Kenya's 42 radio stations. Radio advertising is the most reliable measure of exposure to IPO advertising, as radio is the most widespread form of media consumed in Kenya and an average of 80% of IPO advertising budgets are dedicated to radio campaigns. Geographic footprints of radio stations are well defined, allowing for the creation of measures of the level of radio advertising each Kenyan town is exposed to in each IPO. Survey data on listenership of each radio station in each district, provided by the market research firm, is used to weight the exposure of advertisements on each radio station.

[7] This version of the analysis makes use of the location quotient rather than a Herfindal or Shannon Index due to the fact that the town-level estimates of ethnic populations used are based on district-level aggregates, as described below. Estimating town-level population characteristics based on district-level data yields variation at the local level that calls into question Herfindal and Shannon Index measures.

Number of previous adopters in the town. Mimicry, in the form of conformity to popular practice, is controlled for by including a count of the number of investors in each town that invests in the previous IPO (Tolbert and Zucker 1983). Alternative measures of previous adopters were also estimated, including the lagged number of new investors and the total number of town residents who owned shares at any previous time, without affecting model estimates.

Town wealth. Survey administrators for the 2005 Kenya Integrated Household Budget Survey noted the condition of each dwelling in which respondents live. I use this data to generate estimates of the proportion of town populations that are high, medium, and low socio-economic status. Any dwelling with a dirt floor is coded as low SES; high SES households are characterized by an improved roof and floor as well as piped water and flush toilet; medium SES households are any that fall between these two categories.

Experience with formal financial products. Town-level measures of prior experience with other financial products are constructed from the 2006 and 2009 waves of the FinAccess Survey. Experience with formal financial products is measured as the percentage of the town reporting having used any formal financial product, consisting of bank accounts, credit or debit cards, insurance policies, or pension funds, at any previous time.

Town's at risk population and geographic remoteness. The population of each town at risk of adoption is estimated using population estimates provided by the Kenya Bureau of Statistics. KBS provides estimates for approximately 160 towns, while GIS databases classify all towns according to categorical measures of size. Towns lacking in a KBS population estimate are

assigned the smallest population count of any other town in the database of the same GIS categorical rating. A town's at risk population is calculated as the total population minus the number of previous adopters as well as the share of the town's population estimated to be in the low SES group as described above. Geographic remoteness is controlled for by including a measure of the linear distance from a town to the nearest of Kenya's six major cities, calculated using GIS software.

Construction of town-level characteristics

The above town-level characteristics are estimated based on district-level data taken from the three mentioned surveys. Although each survey is conducted at the individual level, two limitations prevent me from directly estimating town-level attributes and require constructing town-level estimates from district-level aggregates. The 2005 Kenya Integrated Household Budget Survey data is only publicly accessible as district-level aggregates. The 2006 and 2009 waves of the FinAccess Survey are available at the individual level, however these surveys lack a sufficiently large sample size (N=~4,200 in each wave) to create valid town-level estimates.

I use this district-level data to generate town-level estimates by assigning the district aggregates of each variable to the town, and then estimate population-weighted means for all towns within a 20-kilometer radius. If a town is more than 20 kilometers from the nearest district boundary, it will retain its district values. If there are towns in other districts within 20 kilometers, then the town-level measure of each variable will be equal to the mean values across all towns within the radius, weighted by the number of towns within the radius in each district. Estimation schemes using radii of 10 and 30 kilometers were calculated but produced less reliable results.

Methodology

Multilevel negative binomial models are used to estimate the expected number of new investors in each of 563 towns that experience any adoption of the practice in any of six periods, with the first IPO period used to generate lagged profit measures and not directly estimated. The resulting 3,378 observations include 1,326 town-IPO instances where no new investors enter the market; in these cases, profits from that period are coded as 0 for the next period but the observation is not discarded. The multilevel model used generates fixed effects estimates of all independent variables; random town-level effects are controlled for by clustering each model at the town level. All models are estimated using data from all towns, with the exception of Model 8 which performs a robustness check on the influence of alters using a sub-sample of towns with less than 10,000 residents. The full sample of 563 towns represents 98.8% of all towns that contain any adopters of the practice.

The fully specified models addressing research questions 1 and 2, respectively, take the forms:

$$New\ Investors_{it} = \alpha + \emptyset IPO_t + \beta_1 Town\ Traits_{it} + \beta_2 Town\ \pi_{it-1} + \beta_3 Geographic\ Peer\ \pi_{kt-1} + \beta_4 Geograp\square ic\ Peer\ \pi_{kt-1} * Ethnic\ Homogeneity_{it} + e_i \quad (4)$$

$$New\ Investors_{it} = \alpha + \emptyset IPO_t + \beta_1 Town\ Traits_{it} + \beta_2 Town\ \pi_{it-1} + \beta_3 Geographic\ Peer\ \pi_{kt-1} + \beta_4 Ethnic\ Peer\ \pi_{kt-1} + e_i \quad (5)$$

i = 1, …., 563 towns; j = 1, …., 562 weighted peers; t = IPO periods 2 through 7

Where IPO_t contains dummy variables for each IPO period, whose coefficients are in Ø and

$Town\ Traits_{it}$ is a range of town-level control variables measured during that IPO period. The terms $Town\ \pi_{it-1}$, $Geographic\ Peer\ \pi_{kt-1}$, and $Ethnic\ Peer\ \pi_{kt-1}$ contain measures of profits earned by town residents (i.e. 'ego') and profits earned by peers weighted by their geographic and ethnic proximity to the focal town (i.e. geographic and ethnic 'alters'). The term $Geographic\ Peer\ \pi_j * Ethnic\ Homogeneity_{it}$ interacts the level of profits earned by geographically proximate peers with the measure of local ethnic homogeneity. The error term is represented by e.

I model new investor recruitment starting in the second IPO period in order to allow for the profits earned in the first period to be known. Theoretically, this is preferable to allowing profits earned on investments prior to the first IPO to count as the measure of profit, as these investments were much less public in nature and, as seen in Figures 2.2 through 2.4 above, a sufficiently small number of individuals participated in the NSE prior to the first IPO that it is untenable to assume that news of profits earned would travel to the same extent.

Results

Descriptive statistics and a correlation matrix for all variables used in the analysis are presented in Table 2.1. Table 2.2 shows model estimates that address question #1 while Table 2.2 shows results addressing question #2. Model 2 in Table 2.1 form the baseline estimates of town-level characteristics on the recruitment of new investors; these models are estimated separately to show that town-level populations of each of ten ethno-linguistic groups represents a significant improvement to the fit of the model. A discussion of the significance of particular ethnic groups is beyond the scope of this paper.

Tables 2.1 and 2.2

In addition to the added explanatory value of individual ethnic groups, Model 2 shows that including measures of ethnic groups changes the effect of town levels of wealth. Towns with a higher proportion of high SES households become a negative indicator of new investor recruitment once ethnic composition is controlled for. Proportion of low SES households serve as the reference group, and Model 2 suggests that high SES towns are significantly less likely to recruit new investors than are medium and low SES towns. This finding is consistent across all models, although in some models medium SES towns are found to be more likely to recruit new investors than low SES towns, although low SES towns remain stronger recruiters than high SES towns. These estimates are consistent with earlier work by organizational sociologists of increasingly risk tolerant behavior by worse performing actors.

Model 3 adds an estimate of town-level profits earned in the previous IPO, showing a positive and highly significant effect of local profits. Model 3, however, falls just short of the threshold for improving model fit over Model 2, suggesting that local, non-networked profits play an unclear role in the recruitment of new investors. I explore this issue further in Models 5 and 6, discussed just below.

Model 4 adds the measure of profit earned in the previous IPO by geographically proximate peers. Measures of profits earned by network peers are estimated in all models according to equation (2) above and using a v of 10. Following Burt (1987), I recognize that values of v are unknowable a priori, and I report estimates based on v=10 because they provide the best overall model fit, having also tested values of v ranging from 0.5 to 10. Model estimates of network peer profit are positive and significant at all values of v, and values of v smaller than

10 provide estimates of higher magnitude but with weaker model fit. The estimate of geographic peer profits in Model 4 significantly contributes to model fit over Model 3. Based on estimated in Model 4, a one standard deviation in local and geographic peer profits in the previous IPO is expected to yield an increase in the average town's number of new investors by 6% and 18%, respectively. However, the highly skewed distribution of the local profit measure warrants closer attention.

The measure of local profit is constructed as total profit earned by all investors in a town, hence larger cities, home to a disproportionate number of investors, will take on extreme profit values depending on the performance of the previous IPO. For example, Table 2.1 shows a maximum value of the local profit measure approximately 40 standard deviations from the mean, reflecting the total profits earned by hundreds of thousands of Nairobi-registered investors in an IPO with a large gain in share price. Models 5 and 6 serve as robustness checks in this regard, with Model 5 estimated using a subsample of only towns with populations less than 10,000 total residents, thus eliminating the influence of the 15% of the observations comprised by the largest cities and towns. Model 6 is estimated using a subsample of only towns where some investor participated in the previous IPO, providing a subsample of observations in which there is complete data for comparing local and peer profits. In both models, the measure of profits earned by geographic peers remains significant and positive. However, the significance of the local profit measure seems to rely on the presence of a critical mass of profits supplied by larger cities, evidenced by the insignificance the local profit measure in Model 5 where large cities are excluded from the analysis. The key finding from these robustness checks is the consistently positive and significant effect of profits earned by geographically proximate peers, a finding that sets up the analysis of local susceptibility to network learning that is the primary focus.

Research question 1 is directly addressed in Model 7, which shows a negative and significant interaction between geographic peer profit and local ethnic homogeneity. This result suggests that localities comprised of higher concentrations of a single ethnic group are less susceptible to influence from outside peers. However, an important counter factual must be considered. Because the profit measure for each town is expressed as total profits earned by all investors, a plausible alternative to the finding in Model 7 arises if towns located close to the few number of large cities, where profit totals will be higher by definition due to larger numbers of participating investors, are more ethnically heterogeneous. If this is the case, then the result in Model 7 would be true due to proximity to a major city rather than the effect of ethnic homogeneity. Alternatively, it may be the case that the relatively few towns with extreme measures of ethnic homogeneity (the maximum value for ethnic homogeneity is 34, and approximately 8% of the sampled towns have homogeneity scores above 20) drive the negative effect of ethnic homogeneity shown in Model 7. Models 8 and 8 demonstrate the robustness of the finding, however, showing that the result is still obtained even if the 85 observations in the sample representing towns located within 15 kilometers of any major city are excluded (Model 8) or if the 258 observations representing towns with ethnic homogeneity scores above 20 are excluded (Model 9).

The robustness of Model 7 was further explored in a series of models not shown here interacting the homogeneity measure of each of the ten ethno-linguistic groups individually with geographic peer profit. These models show that the interaction effect is not the result of concentrations of particular ethnic groups, as only two of ten ethnic groups have significant interactions. The interaction of local homogeneity of English speakers is positive, while one

interaction with a specific ethnic group is negative. However, this group is small enough that it is statistically impossible that it drives the entire effect.

Figure 2.5 provides a more easily interpretable estimation of the interaction term from Model 7, using the full model to predict the change in the count of new investors in each town at different levels of geographic peer profits and local ethnic homogeneity. Estimates are expressed as ratios of new investors from the previous to the current period, given the values of geographic peer profits and ethnic homogeneity. For example, a perfectly heterogeneous town experiencing the maximum level of peer profit would be expected to double its number of new investors in the next period. A town with an ethnic homogeneity score of 15, however, would recruit very few additional new investors at this high level of profit. Consistent with the negative coefficient on the interaction term in Model 7, the positive effect of any given level of peer profits is less in more homogeneous towns, suggesting that they are more insulated from the network-based social learning process.

Figure 2.5

Models 7, 8 and 9 show a compelling effect of local ethnic homogeneity on susceptibility to network influence; however, the results are not without some weakness. The robustness checks of the interaction term are significant at the four and five percent levels when I take out towns within 15 kilometers of a major city and any observations more than two standard deviations from the mean of ethnic homogeneity. However, the interaction term becomes insignificant if I move the threshold of distance from a major city out to 20km. I would argue, therefore, that these results support the idea that ethnic homogeneity impedes the transmission of

material information through the network, but it's hard to fully separate this effect from that of being located close to large cities where there exist critical masses of profits capable of sending strong signals to geographically proximate communities. This conjures thoughts of the effect we see about town-level profits, that they're only significant when we include towns large enough to generate some critical mass of profits. The measure of profit earned by geographic peers also displays some of these qualities, where it's necessary to be located close enough in the network to a town that generates a critical mass of profits, although local ethnic homogeneity makes each town somewhat less susceptible.

Table 2.3 directly advances research question 2, and in doing so provides a second method for studying the effects of ethnically diverse society on contagion. Model 4 is reproduced in Table 2.3 to provide a basis for comparison when adding the second network proximity measure based on ethnic similarity to that of geographic distance used in the last set of models. Model 10 adds the measure of profits earned by ethnic peers alongside profits earned by geographic peers. Despite the two measures of distance being correlated at almost 0.7, there is enough variation left on the measure of ethnic peer profit to provide a positive coefficient that is significant at the two percent level. Additionally, adding this measure of profit by ethnic peers to a baseline model of profits earned by geographic peers improves model fit significantly. Models 11 and 12 perform the same robustness checks as models 5 and 6, generating estimates using subsamples of only towns less than 10,000 residents (Model 11) and towns with some level of participation in the previous IPO (Model 12). Estimates from Model 11, however, increase the magnitude of the effect of ethnic peers absolutely as well as relative to geographic peers, suggesting that the effects of ethnic similarity between smaller towns and villages is stronger than in larger towns and cities. The negation of local profit seen in Model 11 is identical to that

in Model 5, where local profits fail to be a significant influence on new investor recruitment in small towns that often have no investors in the previous IPO.

Table 2.3

Interpreting the coefficients in Model 11 and 12 suggests that the influence of geographic peers exceeds that of ethnic peers, though both are highly influential. In Model 11, a one standard deviation increase in geographic and ethnic peer profits yield expected changes of 10 and 12 percent, respectively. Interpretations of each variable using Model 12, run on a subsample of towns in which there was participation in the previous IPO, yields expected changes of 16% more new investors given a one standard deviation change in geographic peer profit and a 9% increase in new investors for the same change in ethnic peer profit. These interpretations suggest the relative contributions of geographic proximity versus ethnic similarity in carrying material information across different subsamples of Kenyan society.

One final line of analysis is presented in Table 2.3. Models 13, 14, and 15 provide estimates using a hybrid measure of distance. Rather than estimating the effects of ethnic dissimilarity and geographic proximity individually, I combine them into one measure where ethnic dissimilarity is used to inflate geographic distance according to the following:

$$\textit{Mixed Distance} = \textit{Geographic Distance} + (\textit{Geographic Distance} * \textit{Ethnic Dissimilarity}) \quad (6)$$

Where *Geographic Distance* is calculated using GIS software and *Ethnic Dissimilarity* is Lieberson's measure of qualitative variation, (equation 1 above. Equation (6) has the effect of

increasing the measured distance between two proximate towns composed of different ethnic groups while leaving unchanged the distance between neighboring towns with similar ethnic population.

The estimations of the effect of this hybrid measure are directly comparable to those in models 4, 5, and 6. Run on a sample of all towns, the expected change in the number of new investors in a town given a one standard deviation change in geographic and mixed peer profit measures is 18 and 17%, respectively. Run on a subsample of only smaller towns, the mixed peer profit measure (Model 14) becomes more influential, predicting 14% more new investors given a one standard deviation change in peer profits compared to a 12% change for only geographic profits (Model 5). The influence of geographic profit remains smaller even when run on a comparable sample of towns with investors in the previous IPO, with geographic profits predicting an 18% increase in new investors from a one standard deviation change and the mixed measure predicting a 20% change. The pattern in comparing these two measures is somewhat like the comparison of the effects of ethnic similarity and geographic distance in models 10, 11, and 12, with geographic distance being the more influential measure for all towns in the sample. However, in all forms of the comparison, restricting the sample to smaller towns and villages less than 10,000 residents suggests a larger causal role for ethnic networks.

Concluding Discussion

The analysis presented here deepens our understanding of the global effort to institutionalize neoliberal market structures by developing and applying theories of network diffusion to the study of new investor recruitment in the challenging environment of Kenya. The paper also provided a rare opportunity to study the relative contribution of two different measures of

proximity and similarity in the spread of material information, as well as providing the first empirical measurement of the ethnic similarities that link communities in a developing country. Two major findings result from the analysis. First, high levels of ethnic homogeneity in a community mitigate the network contagion of material information about profits earned by geographically proximate previous investors on potential investors, resulting in fewer new investors recruited from homogeneous towns following highly profitable IPO events. Second, ethnic similarities between towns seem to serve as pathways for the spread of material information about earlier profits earned by co-ethnics, contributing significantly to the recruitment of new investors even after the effects of geographic proximity are controlled for. The evidence presented here on the role of social networks in recruiting new investors overwhelmingly supports the conclusion that the experiences of prior entrants into the Kenyan stock exchange influence residents in proximate towns to purchase shares in later periods, even after extensive efforts are made to control for intrinsic characteristics of investors (wealth, financial literacy, geographic remoteness, numbers of previous adopters, informal norms of specific ethnic groups, exposure to IPO advertising campaigns) as well as characteristics of listing firms and conditions in the national environment at the time of each IPO event.

These results have the potential to significantly contribute to policy makers' efforts to generate functional capital markets in challenging environments. Economists discuss both the benefits associated with a functional stock market in a developing country (e.g. Levine 1996; Levine and Zervos 1998) as well as question their appropriateness as a financial technology in the developing world (e.g. Kenny and Moss 1998; Singh 1999; Stiglitz 1989), but often overlook how a stock exchange reaches some level of maturity. Policy makers either implicitly or explicitly assume that investors will populate a stock exchange once created, conditional on a

sufficiently established nexus of supporting institutional elements, especially legal institutions (La Porta, Lopez-de-Silanes, and Shleifer 1997). Several endogenous processes of financial market growth have been proposed, including firm-centric accounts of seeking private capital when bank lending becomes too costly (Greenwood and Smith 1997) and investor-centric explanations that some minimum level of liquidity in a stock exchange incrementally attracts additional investors in an escalating and self-reinforcing manner (Levine 1991; Bencivenga, Smith, and Starr 1995; Rousseau and Wachtel 2000). These studies, however, leave unanswered the question of how stock exchanges initially attract investors that serve as seeds in this endogenous process as well as the individual-level mechanisms that perpetuate further expansion once begun. Given that most emerging stock exchanges are located in weak institutional arrangements expected to make potential investors reticent to participate, the question of how investors are recruited into the practice is especially pressing. This paper presents perhaps the first quantitative study of the recruitment of new investors, accounting for the contributions of structural characteristics of investors and firms as well as two types of social networks and the susceptibility of local communities to network influence.

The results presented here show no signs of a mimetic process whereby sheer numbers of previous adopters influence later adoption as the practice becomes increasingly taken for granted (Tolbert and Zucker 1983; see also Rossman 2010); however, investigating attributes of early investors within the town, especially wealthier investors with larger portfolio values, may provided quantitative evidence of the process suggested by Preda(2001; 2005) who makes the qualitative argument that participation in the English and French financial markets in the 1800s increased as it was legitimated by an expanding “knowledge frame,” facilitated by the increased prevalence of investor manuals and other materials that increased cognitive understanding of the

practice as well as the increasing social status of those that participated in market. Attending to local-level social interactions between current and potential investors is also suggested by several studies by economists, who find that stock market participation in the U.S. is positively influenced by measures of social interaction in religious and civic organizations (Hong, Kubik and Stein (2004) and that participation in employer-sponsored retirement plans is positively influenced by workplace peer participation (Dufle and Saez 2002). Future research in this area might seek to expand on the local-level diffusion of shareholding in Kenya through further data collection showing individual attributes of investors, attending to status characteristics and other symbolic measures in addition to the financial value of investments. It is entirely possible that local diffusion of the process depends on the number and status of previous adopters, as suggested by Preda; however, this is not the central question of concern in this paper.

To mitigate concerns about generalizability, I suggest that the nature of ethnic cleavages seen in Kenya do not differ qualitatively or quantitatively from cleavages observed in other countries in both the developed and developing worlds. The evidence presented here from Kenya closely matches previous studies of urban areas in developed countries. City-level studies conducted in the U.S. suggest that increased ethnic fractionalization results in lower public goods provision such as schools and roads (Alesina, Baqir and Easterly 2000), where fractionalization can occur along racial lines between groups from the same country of origin. A large literature that follows from Tiebout's (1956) seminal work shows that high socio-economic status groups work to spatially isolate themselves from lower SES groups in order to avoid redistributive tax policies. Taken together, these literatures suggest that the same process of insulation from social learning by fractionalized groups takes place in developed economies as well, similarly hindering the formation of market structures.

The dataset employed here might be strengthened even further by accessing the individual-level survey data from the 2005 Kenya Integrated Household Budget Survey (N=13,450), which includes enough respondents to reliably estimate the town-level characteristics used here without relying on secondary estimated based on district averages. Access to this individual survey data would generate more precise town-level estimates, however, it is unclear that the overall quality of the estimates would improve significantly or that the results of the analysis would change.

The development of functional market institutions in challenging environments is a challenge to be met in scores of countries around the world. Beyond improving data collection in Kenya, it is hoped that the empirical and theoretical effort presented here inspires others to seek out data collection opportunities in novel locations and in doing so recognize that developing economies represent fertile natural laboratories for revising and extending theories of economic action that are directly applicable in developed countries as well.

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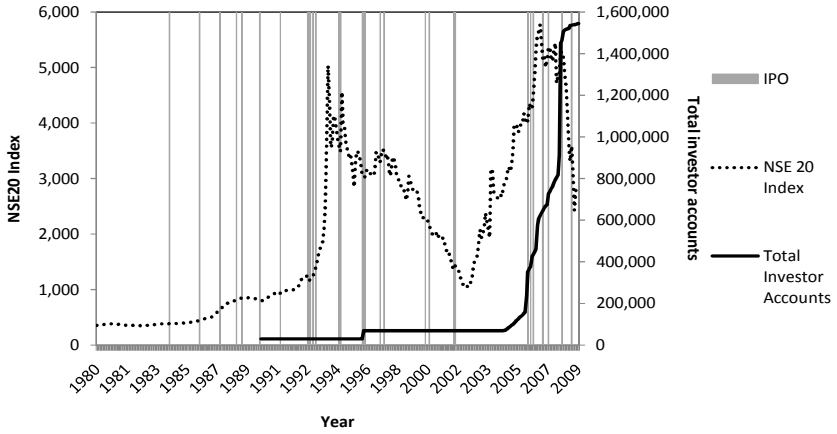
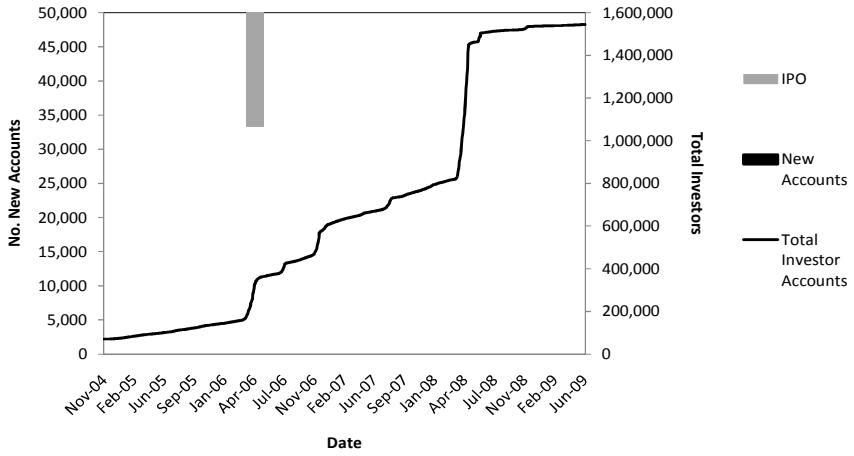
Figure 2.1 Total Investor Accounts Over Time



Source: CDSC database

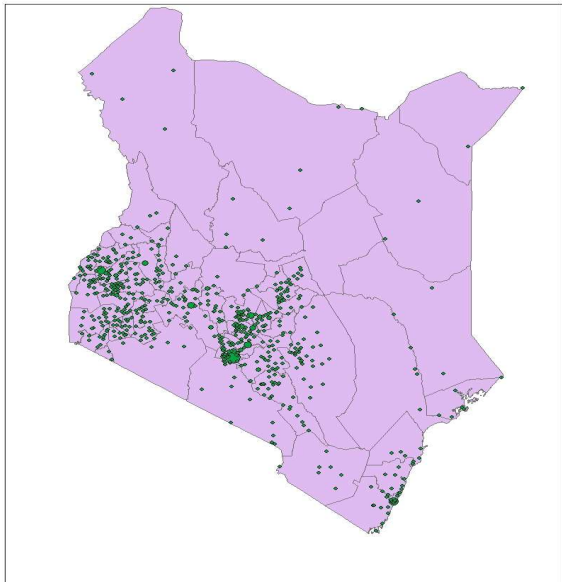
Figure 2.2 New Investor Account Creation, Daily



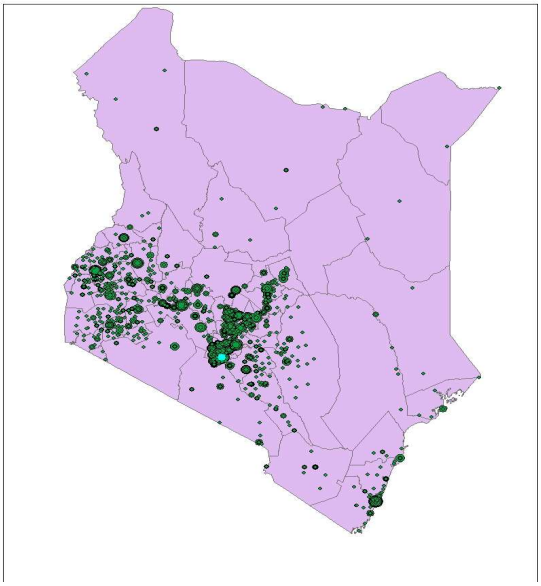
Source: CDSC Clearing and Settlement database

Figure 2.3 Geographic distribution of Kenyan shareholders

Dec 2005: 444 towns; 135,000 investors

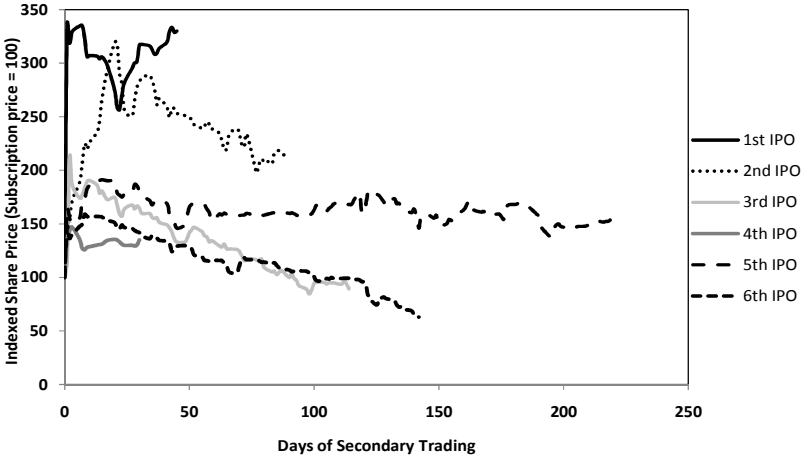


Dec 2008: 575 towns; 1.4 million investors



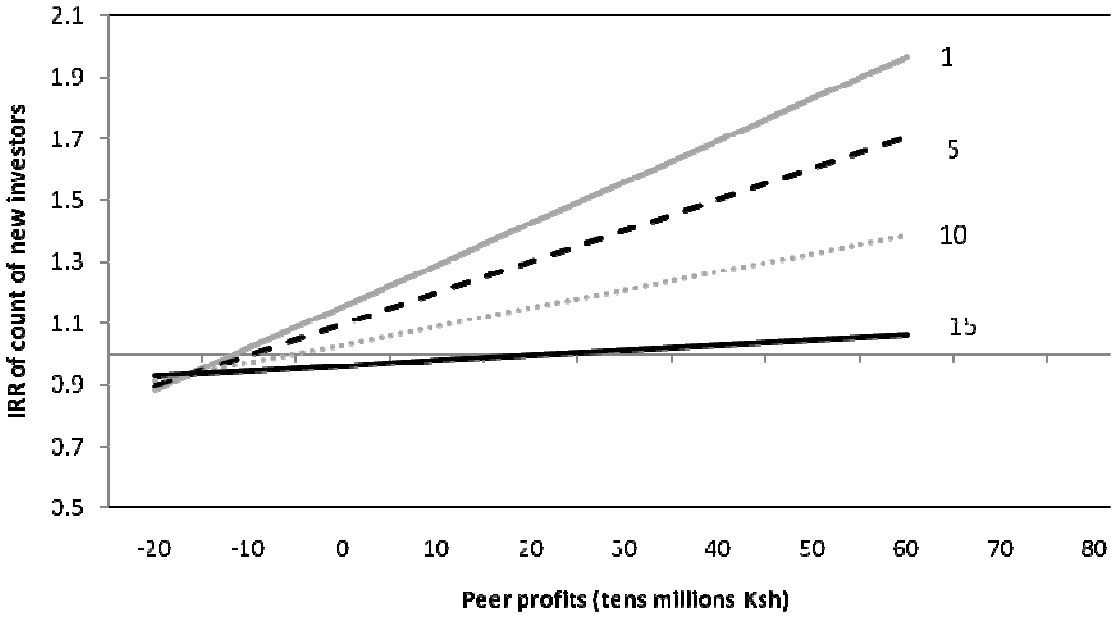
Source: CDSC Clearing and Settlement database; Author's mapping using GIS

Figure 2.4 IPO Share Price at the Start of Subsequent IPO



Source: Nairobi Stock Exchange

Figure 2.5 Estimated Changes in New Investor Recruitment, Town Level, at Given Levels of Peer Profit (t-1) and Local Ethnic Homogeneity



Source: Author's estimation

Table 1

Descriptive Statistics and Correlation Matrix of all Variables in the Analysis (N=3,378)

	Variable	Mean	S.D.	Min	Max	1	2	3	4	5	6	7	8	9
1	No. new investors	198	3,822	0	205,614									
2	Town profit (Tens mill. Ksh)	.15	19.63	-783	814	.17								
3	Geographic peer profit (Tens mill. Ksh)	1.65	16.50	-77.83	88.47	.00	.02							
4	Ethnic peer profit (Tens mill. Ksh)	.08	.48	-2.30	3.09	.00	.06	.70						
5	Hybrid profit (geography and ethnicity; Millions Ksh)	.16	1.58	-6.87	7.87	.00	.03	1.00	.72					
6	No. of investors in previous IPO (000's)	.39	6.43	0	313	.33	-.32	-.02	-.02	-.02				
7	Distance of town to nearest major city (km)	69.26	66.58	0	637	-.04	-.01	-.02	-.01	-.02	-.05			
8	Town's at risk population (000's)	5.76	75.19	0	1,864	.59	.06	.00	.00	.00	.78	-.06		
9	SES high (%)	4.49	1.08	0	54.96	.13	.01	.01	.02	.00	.17	-.24	.20	
10	SES medium (%)	32.39	14.36	0	88.20	.01	.00	-.01	.01	-.01	.02	-.41	.04	.11
11	Use of formal financial products (%)	78.34	18.38	0	100	.00	-.01	-.14	-.14	-.14	.02	-.38	-.01	.03
12	Advertising exposure in town (Millions Ksh)	16.41	3.47	0	205	.14	-.01	-.09	-.15	-.09	.03	-.09	.04	.10
13	Ethnic homogeneity	8.69	5.34	1.03	34.34	-.03	.00	.01	-.05	.01	-.04	.12	-.07	-.29
14	English (%)	6.93	7.28	0	39.40	.10	.00	-.03	-.03	-.03	.14	-.32	.16	.78
15	Swahili (%)	46.46	3.60	0	100	.01	.00	-.19	-.07	-.19	.02	.08	.05	.11
16	Kikuyu (%)	13.78	29.17	0	94.64	.00	.00	.12	.12	.13	.00	-.04	-.02	.05
17	Luhya (%)	2.77	7.79	0	32.44	-.01	.00	-.02	.05	-.01	-.02	-.11	-.02	-.14
18	Kalenjin (%)	3.75	1.22	0	68.58	-.01	.00	.02	.05	.02	-.02	-.03	-.02	-.12
19	Meru (%)	5.27	19.04	0	98.41	-.01	.00	.03	-.01	.03	-.01	-.12	-.02	-.05
20	Kamba (%)	8.28	22.08	0	77.79	-.02	.00	.11	-.05	.10	-.02	.00	-.02	-.12
21	Kisii (%)	2.47	1.53	0	65.37	-.01	.00	-.01	-.02	-.01	-.01	.02	-.02	-.09
22	Somali (%)	1.50	11.49	0	100	-.01	.00	-.01	-.01	-.01	-.01	.53	-.01	-.06

	Variable	10	11	12	13	14	15	16	17	18	19	20	21
11	Use of formal financial products (%)	.22											
12	Advertising exposure in town (Millions Ksh)	.04	.00										
13	Ethnic homogeneity	-.25	-.02	-.06									
14	English (%)	.25	.12	.08	-.30								
15	Swahili (%)	.00	-.35	.06	-.60	.11							
16	Kikuyu (%)	.03	.32	-.03	-.12	.06	-.50						
17	Luhya (%)	-.27	-.27	.02	.12	.03	.18	-.17					
18	Kalenjin (%)	.10	.03	.06	.00	-.03	.11	-.14	-.12				
19	Meru (%)	.01	.26	-.03	.32	-.14	-.27	-.09	-.10	-.10			
20	Kamba (%)	.14	-.14	-.02	.25	-.25	-.22	-.17	-.13	-.14	-.08		
21	Kisii (%)	-.13	.07	.00	.36	-.03	-.08	-.11	-.08	-.03	-.06	-.09	
22	Somali (%)	-.27	-.47	-.06	.40	-.12	-.16	-.06	-.05	-.05	-.04	-.05	-.03

Table 2

Negative Binomial Estimates of Count of New Investors in Each Town in Each IPO

Control variable	1	2	3	4	6	7	8	9
Distance to nearest major city	-.002**	-.003***	-.003***	-.003***	-.003***	-.003***	-.003**	-.003***
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
At risk population	.000	.000	.001	.000	.000	.000	.000	.038***
	(.000)	(.000)	(.000)	(.000)	(.001)	(.000)	(.000)	(.006)
SES high	-.003	-.023***	-.022***	-.013*	-.010	-.012*	-.012*	-.017**
	(.004)	(.005)	(.005)	(.005)	(.005)	(.005)	(.005)	(.006)
SES medium	.003	.003	.003	.005*	.005*	.006**	.007**	.000
	(.002)	(.002)	(.002)	(.002)	(.002)	(.002)	(.002)	(.003)
Use of formal financial products	.005**	.007**	.007**	.008**	.008**	.008***	.008**	.007**
	(.002)	(.002)	(.002)	(.002)	(.003)	(.002)	(.002)	(.003)
Advertising exposure	-.000	.000	-.000	-.000	-.001	-.000	-.000	.000
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
No. of investors in previous IPO	-.009	-.009	-.012*	-.011	-.007	-.011	-.011	-.073*
	(.006)	(.006)	(.006)	(.006)	(.006)	(.006)	(.006)	(.030)
English		.038***	.038***	.030***	.029***	.028***	.029***	.029***
		(.006)	(.006)	(.006)	(.006)	(.006)	(.006)	(.006)
Swahili		.010***	.009***	.007**	.005	.006*	.006*	.004
		(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
Kikuyu		.013***	.013***	.010***	.010***	.010***	.010***	.009***
		(.002)	(.002)	(.002)	(.002)	(.002)	(.002)	(.002)
Luhya		-.003	-.003	.004	.003	.008	.007	.008
		(.006)	(.006)	(.006)	(.006)	(.006)	(.007)	(.007)
Kalenjin		-.005	-.005	-.003	-.002	-.002	-.003	.000
		(.004)	(.004)	(.004)	(.004)	(.004)	(.004)	(.004)
Meru		.005	.005	.004	.002	.005*	.005*	.005*
		(.002)	(.002)	(.002)	(.002)	(.002)	(.002)	(.003)
Kamba		.006*	.006*	.003	.002	.005	.004	.005
		(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
Kisii		-.004	-.004	-.002	.002	.001	-.000	.001
		(.005)	(.005)	(.005)	(.005)	(.005)	(.006)	(.005)
Somali		.020***	.020***	.021***	.028***	.022***	.052*	.023***
		(.006)	(.006)	(.006)	(.005)	(.006)	(.022)	(.006)
Ethnic homogeneity		.013	.013	.005	-.002	-.007	-.002	-.008
		(.012)	(.012)	(.012)	(.013)	(.014)	(.015)	(.014)
Predictive variable								
Town profit			.003***	.003***	.002***	.003***	.003***	.028**
			(.001)	(.001)	(.001)	(.001)	(.001)	(.010)
Geographic peer profit				.010***	.010***	.014***	.013***	.013***
				(.002)	(.002)	(.002)	(.002)	(.003)
Geographic peer profit * ethnic homogeneity						-.001**	-.001*	-.001*
						(.000)	(.000)	(.000)
Constant	-.26	-1.22**	-1.22**	-1.41***	-1.26**	-1.27**	-1.33**	-.963*
	(.197)	(.386)	(.386)	(.382)	(.388)	(.388)	(.417)	(.405)
Log likelihood	-9392	-9344	-9343	-9327	-8310	-9324	-9175	-8362
Chi-squared	22838	24793	24896	25205	23078	25288	24955	23780
Deg. of Freedom	12	22	23	24	24	25	25	25
No. obs	3372	3372	3372	3372	2428	3372	3287	3114

* p<.05 ** p<.02 *** p<.001

Robust standard errors are in parentheses
Note: Estimates of IPO period dummies not displayed

Table 3

Negative Binomial Estimates of New Investors in Each Town in Each IPO

Control variable	4	10	11	12	13	14	15
Distance to nearest major city	-.003***	-.003***	-.006***	-.003***	-.003***	-.006***	-.003***
	(.001)	(.001)	(.002)	(.001)	(.001)	(.002)	(.001)
At risk population	.000	.000	.413***	.000	.000	.420***	.000
	(.000)	(.000)	(.069)	(.000)	(.000)	(.069)	(.001)
SES high	-.013*	-.012*	-.014*	-.009	-.013*	-.016*	-.010
	(.005)	(.005)	(.006)	(.005)	(.005)	(.006)	(.005)
SES medium	.005*	.005*	-.001	.005*	.005*	-.001	.005*
	(.002)	(.002)	(.003)	(.002)	(.002)	(.003)	(.002)
Use of formal financial products	.008**	.008**	.007*	.008**	.008**	.006*	.008**
	(.002)	(.002)	(.003)	(.003)	(.002)	(.003)	(.003)
Advertising exposure	-.000	-.000	.001	-.001	-.000	.001	-.001
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
No. of investors in previous IPO	-.011	-.011	-.147	-.007	-.010	-.117	-.007
	(.006)	(.006)	(.106)	(.006)	(.006)	(.106)	(.006)
English	.030***	.028***	.024***	.027***	.030***	.027***	.029***
	(.006)	(.006)	(.007)	(.006)	(.006)	(.007)	(.006)
Swahili	.007**	.006	.004	.003	.007*	.006	.005
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
Kikuyu	.010***	.010***	.012***	.009***	.010***	.013***	.010***
	(.002)	(.002)	(.003)	(.002)	(.002)	(.002)	(.002)
Luhya	.004	.005	.009	.004	.005	.008	.003
	(.006)	(.006)	(.007)	(.006)	(.006)	(.007)	(.006)
Kalenjin	-.003	-.002	-.003	-.001	-.003	-.003	-.002
	(.004)	(.004)	(.005)	(.004)	(.004)	(.005)	(.004)
Meru	.004	.004	.005	.002	.004	.005	.002
	(.002)	(.002)	(.003)	(.002)	(.002)	(.003)	(.002)
Kamba	.003	.004	.007*	.003	.003	.006*	.002
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
Kisii	-.002	-.001	.000	.003	-.002	-.001	.002
	(.005)	(.005)	(.006)	(.005)	(.005)	(.006)	(.005)
Somali	.021***	.021***	.020*	.028***	.021***	.019*	.028***
	(.006)	(.006)	(.009)	(.005)	(.006)	(.009)	(.005)
Ethnic homogeneity	.005	-.001	.004	-.007	.004	.011	-.002
	(.012)	(.013)	(.017)	(.013)	(.012)	(.017)	(.013)
Predictive variable							
Town profit	.003***	.003***	.092	.002**	.003***	.098	.002***
	(.001)	(.001)	(.074)	(.001)	(.001)	(.074)	(.001)
Geographic peer profit	.010***	.009***	.006**	.009***			
	(.002)	(.002)	(.002)	(.002)			
Ethnic peer profit		.197**	.234**	.186*			
		(.083)	(.097)	(.083)			
Hybrid profit (geography and ethnicity)					.107***	.082***	.113***
					(.018)	(.025)	(.018)
Constant	-1.41***	-1.45***	-1.37**	-1.29***	-1.42***	-1.35**	-1.27**
	(.382)	(.385)	(.495)	(.390)	(.382)	(.492)	(.388)
Log likelihood	-9327	-9324	-6546	-8308	-9326	-6549	-8310
Chi-squared	25205	25284	18494	23177	25181	18378	23051
Deg. of Freedom	24	25	25	25	24	24	24
No. obs	3372	3372	2850	2428	3372	2850	2428

* p<.05 ** p<.02 *** p<.001

Robust standard errors are in parentheses

Note: Estimates of IPO period dummies not displayed

CHAPTER 3

SPECULATION AS A LEARNED BEHAVIOR? INVESTOR ATTRIBUTES AND SHORT TERM SHARE OWNERSHIP IN KENYA'S EMERGING STOCK MARKET

Abstract

This study examines how different types of investors take advantage of the routinely available short term profit opportunities created in a politically manipulated market that incentivizes speculative trading in IPO shares. Empirically, I model rates of speculative IPO trading for investors based on experience in the IPO market, portfolio value, registration type, and social connections to other speculating investors. The analysis pays particular attention to the effects of experience in the market, seeking to advance earlier work in behavioral finance by utilizing longitudinal data for individual investors to provide a deeper understanding of how investment behaviors of newly recruited retail investors quickly evolve to closely resemble those of institutional investors. Analysis of individual-level data for 585,000 investors across five consecutive Kenyan IPOs from 2006 to 2008 suggests that lower income investors are less likely than wealthy investors to engage in speculative trading, but these small investors quickly learn to imitate the speculative behaviors of institutional investors as they gain experience in the market by participating in subsequent IPOs. Contrary to expectations, first-time investors are often the most likely to sell shares in the first month of trading and repeat investors are more likely to adopt longer term investment strategies. Social proximity to other speculators, defined as residing in the same town or utilizing the same stock broker, is also a strong predictor of speculative investing across all investor types. I argue that these findings support the conclusion that investor sophistication is significantly produced by social learning processes endogenous to the market net of atomistic attributes that individuals bring with them to the market.

Introduction

Previous research in sociology and economics has investigated several aspects of the growth of emerging and frontier stock markets including the rate at which they are established (Sylla 1995; Weber, Davis, and Lounsbury 2009), growth in total market capitalization (Singh 1997; Weber, Davis, and Lounsbury 2009), and growth in the number of listed firms (e.g. Boutchkova and Megginson 2000). This paper compliments these analyses of emerging stock market

development through an investigation of the behaviors of various types of investors that collectively form the demand side of these nascent markets. Following previous work by the author that studies how new investors are initially recruited into emerging stock exchanges (Yenkey 2010; forthcoming), this paper studies the trading patterns of newly recruited investors once they do enter the market by focusing on three key questions. How do small, inexperienced, retail investors differ in their trading strategies from institutional investors, and how do the trading strategies of smaller, inexperienced investors change as they gain experience in the market? Does the time horizon toward which newly recruited investors orient their investments differ from investors with more experience in the market? How do these different types of investors react to under pricing and the resulting incentives to speculate in emerging market IPOs? A better understanding of the answers to these kinds of questions about the demand side of emerging stock markets might provide a more complete picture of how investor capitalism is instituted in the world's newly forming capital markets.

Studying how investors react to a stimulus that repeats in a market and how they react relative to other, proximate investors creates an opening for a sociological approach to behavioral finance. Behavioral finance scholars often make use of individual-level attributes such as gender (Barber and Odean 2001), age and wealth (Graham and Kumar 2005), and occupational prestige (Dhar and Zhu 2004) in predicting investment behavior. However, these attributes are measured using panel data, effectively operationalizing them as attributes of atomized actors without addressing their social interactions and how these interactions might change behaviors over time. The sociological approach employed here improves on these methods by measuring evolving investor behavior over time as well as accounting for how social connectedness influences behavior.

The question of how retail investors in developing countries are influenced by political policies common to emerging markets is especially relevant for policy makers governing emerging capital markets that largely operate by attracting domestic rather than foreign capital. Contrary to popular notions of the ubiquity of foreign investment across emerging markets, most emerging markets fail to attract large amount of foreign investment and instead survive by recruiting small pockets of indigenous savings (Singh 1999). In Africa, for example, only South Africa's Johannesburg Stock Exchange attracts any significant amount of foreign capital (Kennedy and Moss 1999). Since more than half of the world's approximately 140 stock exchanges are less than 25 years old and the majority of these are located in developing countries (Mondovision 2007), understanding the orientations and proclivities of these newly created, inexperienced investing populations is also necessary in order to more fully understand the burgeoning global growth of capital markets.

In an effort to recruit new investors into newly formed stock exchanges, policy makers in many developing and transition economies make use of politicized offer terms when conducting initial public offerings (IPO) (Dewenter and Malatesta 1997). Politicized offer terms consist of a number of state regulations that require IPO shares to be made available to large portions of the domestic population, which in developing countries includes lower income groups that do not normally have access to intangible securities. In what some describe as a populist approach to deepening capital market participation (Price Waterhouse 1998; Menyah et al. 1996), regulators often require that initial share prices be set artificially low (making shares affordable to a large portion of a low income country's population), prohibit the use of book building or other competitive tender offers in setting initial share prices, and allocate large portions of shares to retail rather than institutional investors (Jones et al. 1999). Considering that the majority of IPOs

on emerging stock exchanges are privatizations of state owned firms (Boutchkova and Megginson 2000), most listing firms do not object to these offer terms because the state owns both the listing firm and the regulatory agency that craft the terms of the IPO.

One common outcome of these policies is that share prices of newly listed firms tend to increase dramatically in early trading, a result of the combined effects of public relations campaigns that generate excess demand by smaller investors eager to take advantage of a new opportunity and recognition by some that initial share prices are set below market rates (Jones et al. 1999). As a result, emerging markets that employ politicized offer terms frequently create a market environment in which sharp rises in early IPO share trading are the norm. New, less experienced investors in such markets might then be conditioned to think that such short term gains are a normal part of stock exchange investing. In such an environment, it might be natural for new market participants to adopt a speculative approach to shareholding (Keynes 1936; Kaldor 1939). If share price gains are predictably high in the short run, then one rational strategy, especially in environments characterized by uncertainty and volatility (political, economic, and social), might be to liquidate the investment early on, eschewing a longer term orientation to investment.

In addition to possibly incentivizing speculative shareholding, emerging markets are venues where investors of widely differing levels of experience and resources compete against each other. Although lower income groups in developing countries have a long history of utilizing sophisticated financial arrangements, particularly in the informal economy (Guyer 1995), share trading is a new arena of exchange for the majority of stock market participants in developing countries. In these settings, it is common for large numbers of inexperienced retail investors to be recruited into the stock exchange where they are exposed to competition against

more experienced and better capitalized institutional investors. Public and private pension funds, commercial banks, and high net worth individuals make use of professional financial services firms to invest in these domestic securities, and the awareness to buy and sell at opportune times, as is the case in all capital markets, is a key determinant of the profitability of each actor's investment.

This article investigates how investors with different levels of experience with the stock market react to the short term profit opportunities regularly presented in emerging market IPOs. The regularity of profit opportunities that surround these initial offers constitutes a set of events toward which investors might learn to orient their behaviors. I do not make the claim that speculative selling in an emerging market is the maximal strategy for investors; instead, I take it as a regularly occurring opportunity to realize profits that investors might act upon. I measure the rates at which different types of investors do so, looking for changes in relative likelihood of taking advantage of the opportunity as a sign of adaptation and learning by different investors. Recognizing and acting on such opportunities might be seen as a sign of savvy or sophistication on the part of the investor, and previous work, especially in behavior finance, has measured savvy as a characteristic that each investor brings to the market. The contribution this analysis seeks to make is to show that investor sophistication can also result from social processes endogenous to the market. In particular, I build and test a theory of how a relatively low level of exposure to previous price movements in politically manipulated emerging markets is related to higher incidences of short term, profitable trading, in effect arguing that the political manipulations common to emerging stock exchanges tend to condition new investors to approach capital market investment as an opportunity for speculative gains rather than long term investment and in doing so provide an incentive structure in which newly recruited,

inexperienced investors learn a set of trading behaviors similar to the most experienced professional investors.

My investigation of the formation of trading strategies by new investors is premised on a simple condition: the logic inherent in *owning* shares is simpler than the decision making criteria one must go through to *trade* shares. The decision to own a share requires only that the investor come to believe that the value of those shares will be more in the future than in the present; actually realizing that value, however, requires the actor to make a time-specific decision of when to sell the share. Share prices in emerging markets are often highly volatile, thus possibly putting inexperienced investors at a disadvantage in recognizing better and worse times to sell existing shares or buy additional ones.

This paper conducts a case study of the IPO share trading behaviors of a heterogeneous population of capital market investors in Kenya's emerging stock market, the Nairobi Stock Exchange (NSE). With access to the NSE's electronic share ownership and trading databases, I model the effects of market experience, wealth, and spatial proximity to the stock market on the likelihood of speculative trading in a market characterized by rapid early share price gains brought on by the use of politicized offer terms. The analysis focuses on changing rates of speculative selling among new retail investors relative to experienced institutional investors, hypothesizing that retail investors initially lack an understanding of the gains to be made from selling IPO shares in early trading but learn to act on this opportunity as they gain experience in the market. I model speculative behaviors in different IPOs separately, allowing for comparisons of share trading behaviors of different investor types within five IPOs as well as within investor types in IPOs that exhibit varying levels of advertising expenditures and state ownership.

Stock Market Participation in Kenya

In the years between the NSE's founding in 1954 by British colonial businessmen and Kenya's independence in 1963, indigenous Kenyan's were forbidden to own shares (Bishop 1988). For several decades after independence, the NSE operated as a closed group, with shares bought and sold among a small group of Kenya's elite (Ngugi 2003). As a result, liquidity in the market was low even by African standards and growth in market capitalization and the number of listed firms stagnated. The election of a more pro-business administration in 2000 led to a wave of market liberalization reforms, including one measure intended to stimulate the domestic capital market. The Privatization Act of 2005 required that all newly listing firms receive regulatory approval when setting initial share prices and minimum buy-ins required of IPO investors, and that high percentages of IPO shares are allocated to retail investors. The goal of this policy change was to stimulate public participation in the stock exchange, which would increase liquidity and mobilize small pockets of nascent capital to finance uptake of shares in several large state-owned firms whose privatizations were part of market liberalization reforms. Cheap, easy access to shares was seen as the key strategy for mobilizing lower income groups.

An estimated 140,000 investors owned shares prior to the state's effort to deepen participation starting in 2006, and by late 2008 that number would grow to approximately 1.3 million in a country with just over 2.7 million households earning more than double the poverty wage (Kenya Central Bureau of Statistics 2005). Of these 1.4 million shareholders, more than 87% are registered as domestic individuals, 12% are registered as domestic companies, with the remaining one percent being foreigners.[8] Regardless of registration status, high participation rates by lower income groups is inferred by the fact that the portfolio value of the median

[8] All summary data presented here is made possible through access to the complete electronic database of investor accounts used by the NSE. The data source is described in more detail below.

domestic investor is approximately US$70. Fewer than 20% of all investors' have portfolio values exceeding $120, the equivalent of one month's wage at double the average Kenyan income of two dollars per day.

The role played by IPOs in recruiting new investors can scarcely be overstated, as 98% of all new recruits to investor capitalism in Kenya entered the system by subscribing for shares in an IPO rather than purchasing shares in open market trading. Just under half of these 1.15 million new investors have participated in multiple initial offers, increasing their level of market experience in each round of investing.

The undervaluation resulting from politicized offer terms is seen in the indexed share prices of five IPOs shown in Figure 3.1. Undervaluation of IPO shares is measured as the increase in share price during early secondary trading (Ritter 1991), and increases in share price during the first month of the five IPOs shown range from a low of a 55% to a high of 250%. Although three different IPOs saw share price gains of 200% or more in early days of trading, it is worth noting that all IPO share prices increase at least 50% in the first two days. For all but one IPO, this is the highest price the equity reaches in the first year of trading.

Figure 3.1

Also relevant to the analysis presented below is the geographic distribution of Kenyan investors. Just under half of all Kenyan investors are registered as living in Nairobi and approximately 850,000 total investors live within five kilometers of one of Kenya's six major cities. A large portion of all investors are not residents of a major city, however, as just over 40% live more than 20 kilometers from the nearest major city.

As a final note on the Kenyan context, the lack of alternative formal savings and investment opportunities should be mentioned. 25 percent of Kenyans made use of a formal financial product in 2006, including bank accounts, insurance policies, pension funds, or access to any form of formal credit (FSD Kenya 2006). This rose to 40% by 2009, but even then fewer than 7% of the total population had access to a formal insurance product, and more than half of those with insurance received it through government employment rather than securing it from a commercial supplier (FSD Kenya 2009). Despite rapidly growing stock market participation, mutual funds or other collective investment schemes, along with the professional money management that accompanies them, are accessible only to wealthy clients. Collective investment schemes require minimum buy-ins of more than 500,000 Kenyan Schillings, approximately 10 times the average annual income. Taken all together, these indicators suggest that the average Kenyan has little experience with formal financial market products (FSD Kenya 2009).

Theories of Investor Behavior

Aggregated reactions of market participants often serve as a central unit of measurement in the sociological study of financial markets. For example, changes in share price, by definition an aggregate measure of investor reaction to various stimuli, have been used to study investor reaction to stock repurchase plans (Zajak and Westphal 2004), coverage by a specialized analysts (Zuckerman 1999), and location of listed firm within industry classificatory structures (Zuckerman 2004). This article approaches the issue of price formation from a different perspective, making individual investors rather than firms or other supply side actors the unit of analysis. Doing so addresses an understudied element of financial markets in economic

sociology, a decomposition of demand side actors and their reactions to market elements in a way that provides a causal analysis of price formation rather than using price as the stimulus. Several scholars have provided in-depth studies of the decision making criteria of institutional investors and market makers (e.g. Baker 1984; Abolafia 1996; Buenza and Stark 2004), but studies of non-professional investors are rare. Notable exceptions include Carruthers' (1994) study of political affiliations among early traders on the London Stock Exchange and Harrington's (2008) study of differing investments made by groups within investment clubs. This paper expands on these earlier works, providing the first large scale, quantitative analysis of a complete population of individual investors.

An Endogenous Theory of Investor Sophistication

Analysis that differentiates behaviors of varying types of investors has largely been the domain of behavioral finance scholars. Shefrin and Statman (1985) provided early work in disposition theory, the central premise being that investors are risk adverse when assets are positively performing and risk loving when assets are declining in value. The disposition effect has stimulated a large empirical literature (e.g. Odean 1998) showing that investors in general tend to sell well performing assets too early and hold poorly performing assets too long and that the tendency is stronger for retail as opposed to institutional investors (Dhar and Zhu 2006). The disposition effect has been studied in non-U.S. markets as well, including Israel (Shapira and Venezia 2001) and Taiwan (Shu et al. 2005).

In addition to studies of the disposition effect, behavioral finance scholars often compare behaviors of different types of investors. Barber and Odean (2000) argue that many retail investors overestimate the value of information they collect, leading to over trading and a

tendency to purchase stocks that underperform those previously owned. In another study, these authors extend this argument by showing overconfidence to be more common for male investors than for females (2001). Graham and Kumar (2005) find that older and lower income investors are more likely to purchase shares after announcements of firm dividend payments, an indication of preference for predictable income streams by more economically vulnerable investors. International patterns of suboptimal trading strategies are also a part of this literature. Seasholes and Wu (2004) show that retail investors on the Shanghai Stock Exchange are increasing willing to purchase shares the day after a large run up in prices, a trait that makes them vulnerable to market manipulations by more savvy institutional investors.

A common theme in this literature is the range of cognitive missteps by retail investors that negatively impact the performance of their investments relative to institutional investors. Several studies include proxy measures for individual attributes expected to ameliorate what these authors label boundedly rational behavior, including wealth, occupational prestige, trading frequency, and age (Dhar and Zhu 2006; Graham and Kumar 2005), or that are expected to intensify it, as is the case in the link between gender and overconfidence (Barber and Odean 2001). These studies are also conducted in developed market settings with a large number of listed firms to choose from and many alternative savings and investment opportunities, leaving open the possibility that an actor's share trading activities are less instrumental to overall welfare than might be the case in a country like Kenya, where alternative investment opportunities are unavailable for most actors (FSD 2006; FSD 2009) and where market price movements themselves are often the sole source of information used to make trading decisions.

I consider it uncontroversial that investors exhibiting weaker traits associated with financial literacy and less access to material information tend to manage assets sub-optimally

relative to professional investors. The central question considered here, however, is whether or not investors learn to better manage assets as they gain experience in the market. Previous research has tended to make use of panel data, and in doing so generates fixed measures of investor attributes. The case study presented here, however, makes use of longitudinal data of individual investors participating in consecutive IPOs, thus measuring experience gained through each round of investing. My intent is to endogenize "market savvy" as a measure of experience in a market rather than an external attribute of investors brought to the market. Studying changes in investor behavior in this way demonstrates how the sociological perspective is well suited to explaining price movements in markets as outcomes of varying preferences of different social groups within the market. Rather than measuring market experience as an atomistic trait of an investor's number of recent trades, I operationalized market experience as iterations of exposure to a social system in which interactions with the market mechanism and with proximate others simultaneously working to make sense of price changes in the market. I argue that a more complete understanding of capital market participation is had by viewing these markets as interactions between groups mediated by a pricing structure. The analysis presented here studies not just how types of investors tend to behave, a central feature of much sociological as well as economic research, but also how these behaviors change over the course of exposure to meaningful events.

The meaningful events considered here are the early weeks of trading in five sequential IPOs. As shown in Figure 3.1 and explained earlier, share prices in Kenyan IPOs increase significantly in the early days of secondary trading. The hypotheses below predict relationships between investors' repeated exposure to this phenomenon , to others also experiencing it, and the likelihood of taking advantage of a profit opportunity regularly created in this politically

manipulated market. Subscribing for IPO shares with an orientation toward selling them in early trading is a clear example of speculation, defined by Kaldor (1934) as the purchase of an asset with the intent to profit solely from the change in price of the asset rather than through changes in the real value of the asset, e.g. dividend payments or firm growth over time. Keynes (1967) greatly expanded this concept, arguing that the focus on short term price changes rather than long run firm performance, "which are obviously of an ephemeral and non-significant character, tend to have an altogether excessive, even absurd, influence in the market" (p. 154). Rather than these excessive swings being countered by professional investors, Keynes notes that professional investors are uninterested in making long term predictions about firm performance, instead preferring to "beat the gun" by second guessing what others in the market will be willing to pay for an asset in the short term future. Keynes also argues that short term gains are a salient goal for many investors, as longer term investing entails risks that are avoided when focusing on short term gains.

This paper does not have as its goal naming winners and losers among Kenyan investors. The IPOs modeled here are too young to determine what the long-term gains from investing will be. Instead, I seek to better understand reactions to a policy regime that creates opportunities for short term profit making. Many investors will likely subscribe for IPO shares with the intention of using the asset as a long term savings and investment vehicle, but the focus of this paper is better understanding the rates at which different groups act on this incentive, and more importantly, how reactions change with repeated exposure.

Previous studies of the disposition effect among capital market investors find that less sophisticated investors tend to sell well performing assets too early and hold poorly performing assets too long. In contrast, I suggest that the opposite will be true in Kenya. Following Keynes, I

expect more professional investors, such as high net worth investors and those registered as companies, to eschew long term risk in favor of short term gains by selling shares during early IPO price bubbles at a higher rate than other investors. These exogenous characteristics are not the theoretical focus of this analysis, but it is necessary to establish the speculative trading behaviors of professional investors as a standard against which to compare other investor groups.

The central theoretical question of this paper is the link between experience with IPOs that make use of politicized offer terms and speculative share sales. Will inexperienced investors conform to feedback models of asset pricing by interpreting rising share prices (MacKay 1841) or exuberance in the media or among one's personal contacts (Shiller 2000) as a signal of future gains, and therefore hold their shares in expectation? Logically, it may be possible that first time investors simply will not know to watch for sharply rising share prices within the first few days of trading. In the absence of previous interactions with the market, I predict that inexperienced investors will be more likely to conform to a sort of "reverse disposition effect" by overestimating the durability of early price gains in Kenyan IPOs and therefore not selling shares during early price bubbles.

Hypothesis 1. Net of other characteristics, increased experience in the IPO market will be associated with a higher likelihood of selling shares in early trading.

However, I predict that this initial condition will reverse itself as repeated interactions with this market structure improve the likelihood that less experienced investors will act on the short term profit opportunities created by the use of politicized offer terms. Interactions that serve as learning opportunities can come in two forms: observing previous participants and

interacting with others actively engaged in sense making during the same event. Those that wait to enter the market until later IPOs are not necessarily deprived of the knowledge of market events that occurred in earlier IPOs. With each successive IPO, the penalty to inexperience might be expected to decline as later adopters gain information on market movements prior to entering the stock market. Similarly, some new investors may have been influenced to buy shares as a result of proximity to others that have participated in earlier IPOs. If this is the case, then even new investors may learn from the experiences of proximate others that selling shares in early trading is a positive strategy.

Hypothesis 2. First-time investors participating in later IPOs will be more likely to sell shares in early trading than first-time investors in earlier IPOs.

In addition to learning from watching previous IPOs unfold, I predict that investors will be influenced by inter-personal connections with others that have learned how to navigate the short term pricing environment in these IPOs. Aside from the well established social-structural influence of geographic proximity, finance scholars have studied herding behaviors in financial markets, linking increasing rates of speculative selling to publicly available information (Froot, Scharfstein, and Stein, 1992).

Hypothesis 3. Investors that are socially connected to investors that sell shares in early trading will be more likely to speculate themselves.

Two potential challenges to the validity of the analysis deserve mention. First, capital markets in general and emerging markets in particular are frequently plagued by information asymmetries that favor insiders to the detriment of other shareholders. Second, emerging markets are often plagued by low levels of liquidity, making it difficult to reach valid conclusions about trading behavior. The research design employed here takes these into consideration. First, the benefit to insider information should be mitigated by restricting the analysis to a consideration of share sales in the first 30 days of trading, a sufficiently short time period that firms are assumed to not exhibit material changes in performance and underlying valuation. Regarding liquidity constraints even among highly popular IPO shares, interviews with NSE officials confirm that the source of the constraint is regularly on the buy side. Because bids and offers are matched on a "first come, first served" manner, it is assumed that even with an oversupply of sell orders each has an equal probability of being matched with the limited number of available bids. Without access to data showing the extent to which buy-side liquidity constraints curtail share sales, I cannot reach conclusions about absolute levels of speculative activity in each IPO. Instead, relative rates of speculative selling will be the focus of the analysis, a comparison unaffected by liquidity constraints.

Data and Methods

I test the above hypotheses using a unique dataset provided by the Central Depository and Settlement Corporation.[9] The CDSC databases contain records of all share transactions since the NSE migrated to an electronic platform in November 2004; there is no over the counter market for shares in Kenya, and all share transactions must pass through the CDSC system. Because

9 The CDSC is the legal entity that acts as clearinghouse for all share transactions on the NSE. It is jointly owned by the Nairobi Stock Exchange and the Capital Markets Authority (Kenya's regulatory body).

more than 90% of all investors have entered the market since that time, the CDSC databases provide a complete record of all ownership and trading activity in the IPOs modeled here. CDSC databases contain a complete record of the number of shares purchased by each investor in each IPO since 2004, and access to the electronic accounts also contains background information for each investor including age, gender, registration type (individual or company), and town of residence. Approximately 18% of the sample is missing a record of town of residence, but these accounts do not differ significantly enough in other attributes (share ownership, age, gender, and registration type) to indicate a bias in the pattern of missing data. Only domestic investors are included in the sample used in this analysis.

Dependent variable

The dependent variable in all models is a dichotomous measure of whether or not the investor that subscribed for the IPO sold shares in the first month of secondary trading. The relatively small percentages of investors in each IPO that engage in speculative trading (see Table 3.1) bias coefficients of explanatory variables away from statistical significance, yielding stronger arguments for the role played by explanatory variables estimated to be statistically significant. Defining speculative selling as share sales in the first 30 days is justified both by the empirical regularity of share price changes shown in Figure 3.1 as well as the fact that the first month is by far the most active trading in most IPOs. Figure 3.2 demonstrates that four of the five IPOs are characterized by steeply declining levels of liquidity after the first month of trading. This trend suggests that speculative selling is a central orientation of a large portion of active share owners in this market and further justifies limiting the present analysis to this first month of secondary trading.

Figure 3.2

Independent variables

Market experience is measured by three dummy variables. “Inexperienced” indicates that the IPO is the account’s first investment experience in the stock market, “some experience” indicates that the IPO is the second such investment, and “experienced,” indicates investors having participated in three or more IPOs or who traded shares prior to the launch of the first IPO in this dataset in early 2006.

Each account is coded for registration status as “individual” or “company”; as mentioned above, registration as a company does not necessarily exclude an investor account from being a retail investor, as the majority of company accounts mirror the majority of individual accounts in subscribing for minimum allowable IPO subscriptions. The legal difference is that “company” accounts are registered to firms with formal articles of incorporation; while these firms range from small, sole proprietor firms to larger companies such as investment banks, I control for the distinction with the assumption that, on the whole, this is a meaningful distinction.

The size of the initial investment is measured as the number of shares each account purchases during the subscription period prior to secondary trading. Because all IPOs use a fixed price for all subscription shares, there is no difference in measuring initial investment in terms of shares rather than monetary value. All IPO share subscriptions take place during a several week subscription period prior to the actual listing of the firm. During this subscription period, each investor places an order with his or her stockbroker for the number of shares demanded, subject to the minimum required number of shares allowed for any subscription. For modeling purposes,

I create four dummy variables representing size of initial investment: “small” (those that take only the minimum allowed subscription), “medium” (those taking more than the minimum but no more than two times the minimum), “large” (those between medium and institutional), and “institutional” (the top 1% of all subscribers).

Social connectedness is measured by “Town Selling,” which is the percentage of other IPO subscribers in one’s town that sell shares during the first month. This variable does not measure whether other investors sold prior to or after the focal investor, allowing for the possibility that discussion of selling might be as influential on an actor’s decision making as the execution of the trade itself.

Control Variables

All Kenyan investors must execute trades through a registered stock broker. “Broker selling” measures the percentage of other IPO subscribers whose accounts are handled by the same stock brokerage that sell during the first month. The question of whether some brokers more actively influence their clients’ selling is outside the scope of this paper; the analysis presented here controls for but does not seek to explain broker influence.

Attributes of each investor’s spatial location within Kenya are controlled for in several ways. “Distance” is a continuous measure of distance from the investor’s town of residence to the closest of Kenya’s six major cities measured in kilometers. “Urban” is the percentage of an investor’s district that resides in urban as opposed to rural setting, a measure generated by the 2006 Kenya Household Budget Survey. It was noted above that more than half of all IPO subscribers live in one of Kenya’s six major cities, with approximately 40% of all subscribers living more than 20 kilometers away from a major city. The consequences of living in a remote

region in a developing country are non-trivial. Residents of rural areas in Kenya are much less likely to participate in formal sector financial institutions such as commercial banks and have previous experience using intangible financial products such as insurance policies and pension funds (FSD Kenya 2009). I control for standard socio-economic influences by using district-level data from the 2006 and 2009 waves of the FinAccess Survey. Data from the 2006 survey is used for models of IPO trading from 2006 through the end of 2007, while data from the 2009 survey is used in models of IPOs that began trading in 2008. District-level aggregates of median income, percentage of the adult population having complete high school, and percentage of population reporting use of commercial checking or savings accounts, insurance policies, or pension funds are also included.

Model

Binomial logistic regression models are used to estimate the likelihood of an investor selling shares in the first month of trading. Robust standard errors are estimated by clustering at the town level to control for random effects of town residence. Models are estimated using records of all domestic IPO subscribers with a confirmed location of residence, which accounts for approximately 83% of all domestic IPO investors.

The first five of seven IPOs carried out on the NSE since the passage of the Privatization Act of 2005 are modeled separately. Because only a small percentage of IPO subscribers sell shares in early trading, modeling all five IPOs together using offer-level dummy variables to control for firm characteristics or ordinal occurrence is likely to wash out effects of the explanatory variables. Additionally, modeling each IPO separately allows for easier comparisons of changes in relative behaviors between investor groups over time. Excluding the sixth and

seventh IPOs from the analysis is a theoretically motivated part of the research design. The first five IPOs constitute a more comparable sample because each was a relatively unknown company to the general public prior to listing, even though they vary significantly in other characteristics such as size, state ownership, and profitability. The sixth and seventh IPOs were well known firms prior to their IPOs, and that familiarity has been shown elsewhere to alter trading patterns and investor valuations (Grullon, Kanatas, and Weston 2004; Pollock and Gulati 2007). Additionally, the 2008 financial crisis occurred just after the launch of the sixth IPO, an exogenous shock that had a detrimental effect on trading patterns in the sixth and seventh IPOs.

Results

Table 3.1 provides basic summary statistics for each of the explanatory variables used in the analysis.

** Table 3.1**

Table 3.2 summarizes firm and offer-level attributes of each IPO relevant to the analysis.

** Table 3.2**

Logistic regression coefficients of likelihood of selling IPO shares in the first 30 days of trading on the secondary market are presented in Table 3.3. Model 1 for each of the five IPOs includes all explanatory and control variables, while Model 2 for each IPO includes interactions of market experience, size of initial investment, and registration status. In all IPOs, Model 2 is a

better fit to the data that the baseline Model 1. Estimates of socio-economic control variables are not displayed, as most do not affect the outcome in a statistically significant way.

** Table 3.3**

To facilitate interpretations of the model estimates, the discussion focuses on predicted probabilities of speculative selling generated from the fully specified Model 2 for each IPO. Figures 3.3-3.5 show the predicted probabilities of speculative selling of shares in each of the five IPOs according to registration as an individual or a company, size of initial investment, and experience in the market; each interpretive graph also includes a measure of the maximum share price reached during the first month of each IPO. Figure 3.6 shows predicted probabilities for three ideal-type investors that exemplify types of investors of interest.

Figures 3.3-3.6

Figure 3.3 shows an inconsistent relationship between registration status as individual versus company and the probability of selling shares in the first month of trading. Investors registered as individuals are more likely to sell shares in early trading compared to company investors in two of five IPOs, and only slightly less likely to sell in two others. In contrast, Figure 4 demonstrates the significant effect of size of initial investment on probability of engaging in speculative selling; institutional investors are disproportionately likely to realize gains in early secondary trading. In each IPO, small and medium sized investors are comparable

in probabilities of selling in early trading, while the largest difference in this probability is between large and institutional investors.

Surprisingly weak support for the predicted positive effect of market experience on speculative trading is seen in Figure 3.5. The predicted probability of selling shares in early trading based on the number of IPOs an investor has participated in is highest in all five IPOs for first time investors and lowest for the most experienced investors in all but the fourth IPO. As mentioned earlier, it is not assumed that all investors will seek out short term profit opportunities, as some may purchase shares explicitly as long term savings vehicles. Figure 3.5 suggests that repeat investors may adopt a longer term position regarding share ownership, although that conclusion cannot be tested with the current data. However, the predicted probabilities seen in Figure 3.5 strongly suggest that first time investors are not at a disadvantage in terms of recognizing and acting on such short term profit opportunities. The question of whether first time investors enter the market motivated to do so is another question that cannot be answered with the data at hand but that future research will want to address.

Despite the higher predicted probabilities of speculative trading by first time investors net of other traits, there remain strong reasons to suspect an additional positive effect of market experience on investor orientation toward speculative trading. Figure 3.6 expands this predicted probability analysis to estimates of speculative selling by three ideal type investors: experienced, institutional investors registered as a company; first time, minimum, individual investors; and minimum, individual investors well experienced in this market. As mentioned earlier, the absolute level of speculative selling by any particular investor group should not be directly considered given the liquidity constraints in the secondary market; instead, they should be used to compare groups to each other and see if the relative probability changes with time. When such

comparisons are considered across our three ideal type investors, evidence in support of an experienced-based learning effect becomes much more readily apparent.

In the first IPO, the experienced, institutional, company investor is 10.5 times more likely to sell shares in early trading that the ideal first time, minimum, individual investor. By the fifth IPO, the relative difference between these two investors drops to 2.3 times. The largest drop in relative differences comes between the first and second IPOs, which Table 3.2 shows came only three months apart, when the difference drops from 10.5 times to only 2.9 times. One cannot make a durable causal claim based on a single change between events only three months apart, but the fact that the difference between these two groups is never more than half of what it was in the first IPO after the stock exchange was opened to mass retail participation suggests that this newly recruited population learned to "read" the market quite quickly.

Another pattern in the relative probabilities between these two groups that lends support to the proposition that inexperienced investors are conditioned to speculate based on returns made possible by politicized offer terms is seen when considering the relationship between the relative probabilities and the extent to which share prices rise in secondary trading, indicated by the black line in each figure. Share prices rose similarly in the first two IPOs, with each gaining more than 300%. In contrast, share price gains were relatively low in the third and fourth IPOs, with share prices doubling in the third compared to only 50% in the fourth. While these might still sound like very healthy gains, consider that each case represents a halving of the profit rate relative to the preceding IPO which occurred only a short time before. In these offers, the likelihood of acting on the profit opportunity increased between minimum, inexperienced investors relative to experienced institutional investors. This trend reverses itself, however, when relative share price gains increase between the fourth and fifth IPOs. If speculative trading

behavior is partly conditioned by expectations of early price gains, the relatively disappointing performances of the third and fourth IPOs may have made many investors unwilling to sell shares for low gains relative to the first two IPOs, preferring instead wait for expected gains.

The regularity in the pattern between first time and experienced investors, both of whom are individuals and minimum investors, also suggests a changing pattern in how Kenyans orient themselves toward subsequent rounds of investing. The experienced, small investors are uniformly less likely to speculate in early IPO trading, as their predicted probability of speculating in each IPO is approximately 70 to 80% that of their inexperienced counterparts in all five IPOs. Perhaps, as mentioned above, this points to an initial orientation toward using the stock exchange as a tool for short term profit making in an environment characterized by few such opportunities, while ongoing investment is characteristic of those seeking longer term savings vehicles. Again, this proposition cannot be proven here, but the results suggest such a pattern may be in play.

Concluding Discussion

The findings presented above suggest three primary conclusions. First, that the potential disadvantages of possessing traits associated with lower levels of investor sophistication attenuate sharply in a short period of time as investors gain experience making IPO investments. Second, that apart from an individual's interaction with the market structure itself, interpersonal contact with other speculators is a strong and consistent predictor of early selling. Third, that the newly recruited investing population in Kenya comes to the market oriented toward share ownership as a short term investment strategy. Taken together, these findings strongly support the notion that increasing experience with the stock market, either in the form of direct contact or

via contact with proximate others, has a strong influence on how norms of investing are formed in this emerging market.

Figure 3.7

Economists have studied the beneficial function played by sophisticated, well capitalized institutional investors as "rational speculators," buying when prices are low and selling when prices are high in a way that serves to balance volatility-inducing trades by less sophisticated and more opportunistic investors whose exuberance drives prices up during bubble formations and contributes to collapsing prices when the bubble bursts (DeLong et al. 1990). Evidence presented here suggests that, at least in the Kenyan context, it is newly recruited emerging market investors increasingly perform this function after only a brief apprenticeship in an unfamiliar market structure. That an increasing proportion of first-time investors provide liquidity during early and unsustainable periods of excess demand furthermore suggests that investors new to the practice enter the market with a preconceived orientation toward short term investing. The analysis presented here intentionally avoids a causal argument regarding buying patterns in early IPO trading, but the descriptive data shown in Figure 3.7 suggests that this pattern of speculation-oriented newer investors helps to balance high demand for IPO shares in early trading. This same data also suggests that differences between group-level trading patterns modeled above seem to be initial orientations toward share ownership that are more strongly on display at the beginning of secondary trading. Figure 3.7 shows daily net buying and selling patterns in the first 100 days during the third IPO for four types of investors: most and least experienced, institutional, and non-subscribers. Non-subscribers for the IPO are those investors that did not purchase shares

during the subscription period but purchased shares during early secondary trading. Higher net buys or sells are illustrative of more uniform preferences by members of the group during a particular day's trading. The example presented here closely represents trends in net trading in all other IPOs. This descriptive data suggests that early price gains in the IPO market are the result of high demand by investors that, for whatever reason, did not subscribe for shares prior to the start of trading. This demand is met in the secondary market by a combination of first-time and institutional investors, and example shown here suggests that each group, despite strong background differences, provides similar levels of liquidity. In contrast, investors participating in their third or more IPO are also net buyers in the early period, reflecting the above discussion that more experienced investors, even lower income ones, are attracted back to the market as a longer term savings vehicle as opposed to a short term speculative one. In addition to serving as sources of liquidity in early trading, each of these groups demonstrate stronger patterns of net trading in the earliest days, with differentiating patterns quickly eroding over the course of the first few months. This pattern of strong, initially different net trades across the investor groups studied here is evident in almost every IPO for almost every group, a pattern that I argue signifies differing motivations by different types of investors at different times.

Capital markets contain multiple incentive structures, only some of which stimulate speculative trading while others encourage longer term investing, depending on the interests of the investor. For example, some institutional investors may be forced to buy overpriced equities due to requirements of diversifying assets or restricted off shore investing. My goal has is not to assign judgments of rationality to particular behaviors, but to understand what types of investors are more likely to react to the particular set of incentives resulting from the use of politicized offer terms. It is also a goal of this paper to advance both our understanding of financial market

behaviors and the institutionalization of investor capitalism in developing countries around the world. It is my hope that the evidence presented here will be an early source of information and inspiration to other scholars interested in studying the factors that contribute to the construction of the demand side of markets as well as the value of emerging market settings as natural laboratories where young markets can be observed.

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Figure 3.1 Change in IPO share prices

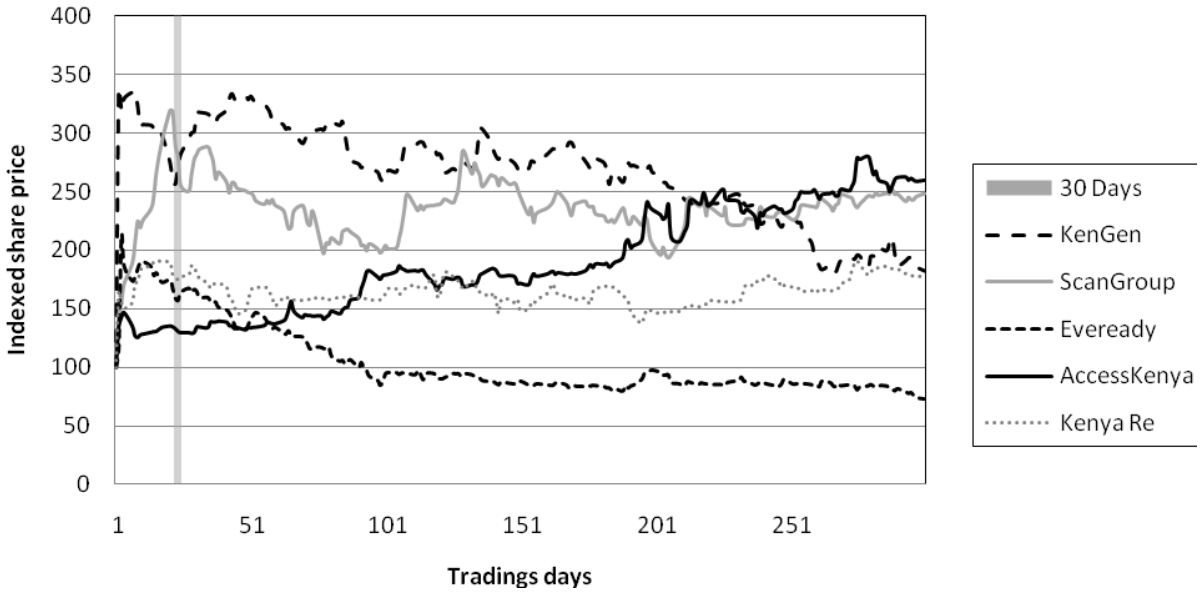


Figure 3.2 IPO Trading Volume, monthly

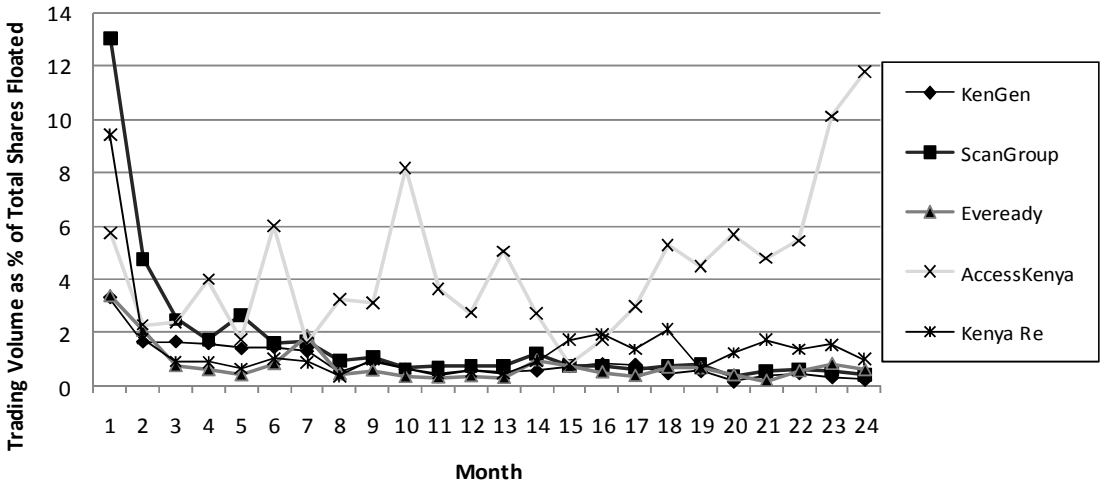


Figure 3.3: Predicted Probability of Speculative IPO Selling, by investor registration type

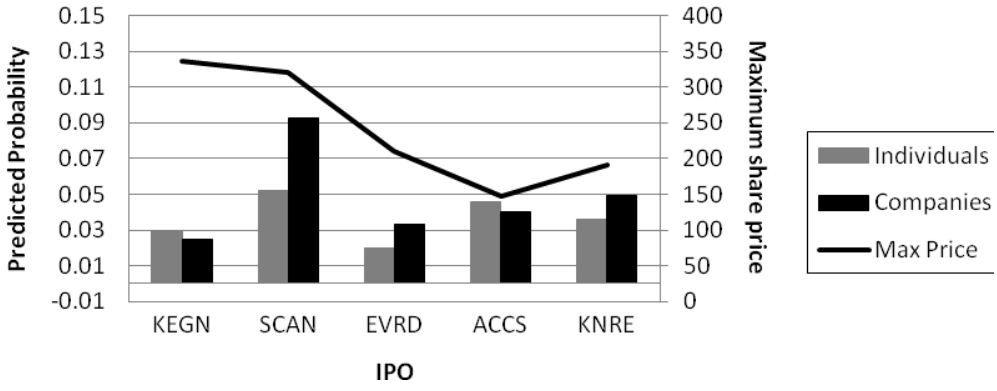


Figure 3.4: Predicted Probability of Speculative IPO Selling, by size of initial investment

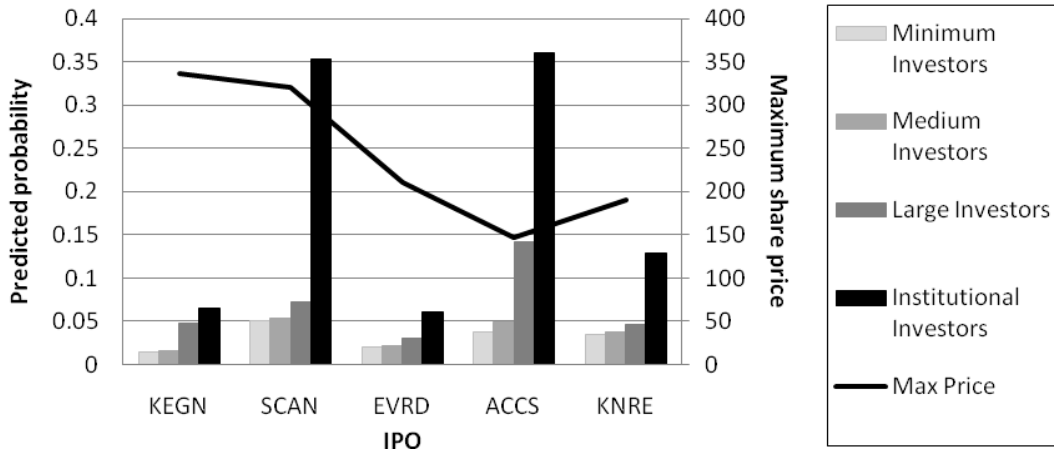


Figure 3.5: Predicted Probability of Speculative IPO Selling, by investor experience

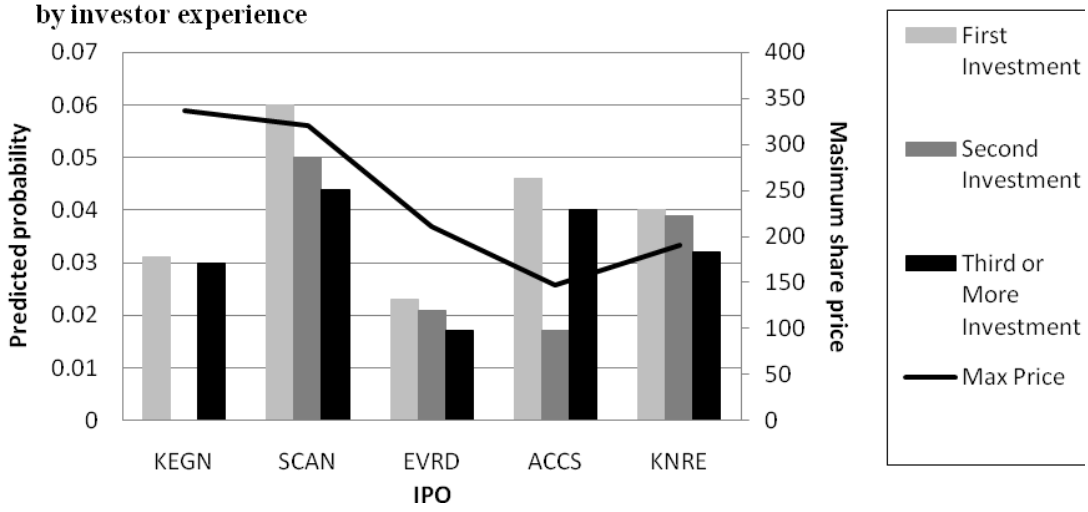


Figure 3.6: Predicted Probability of Speculative IPO Selling, by investor ideal type

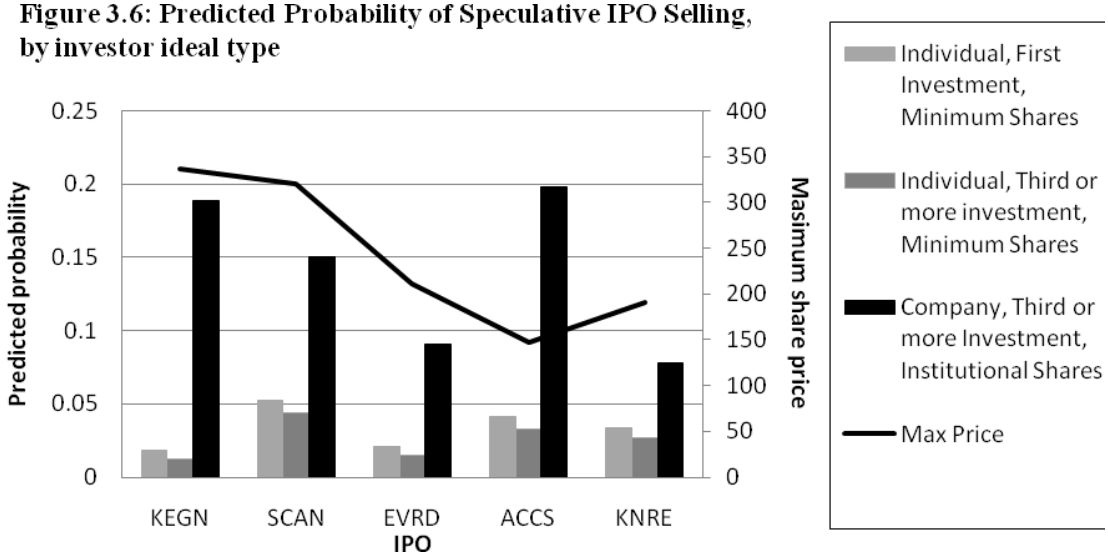
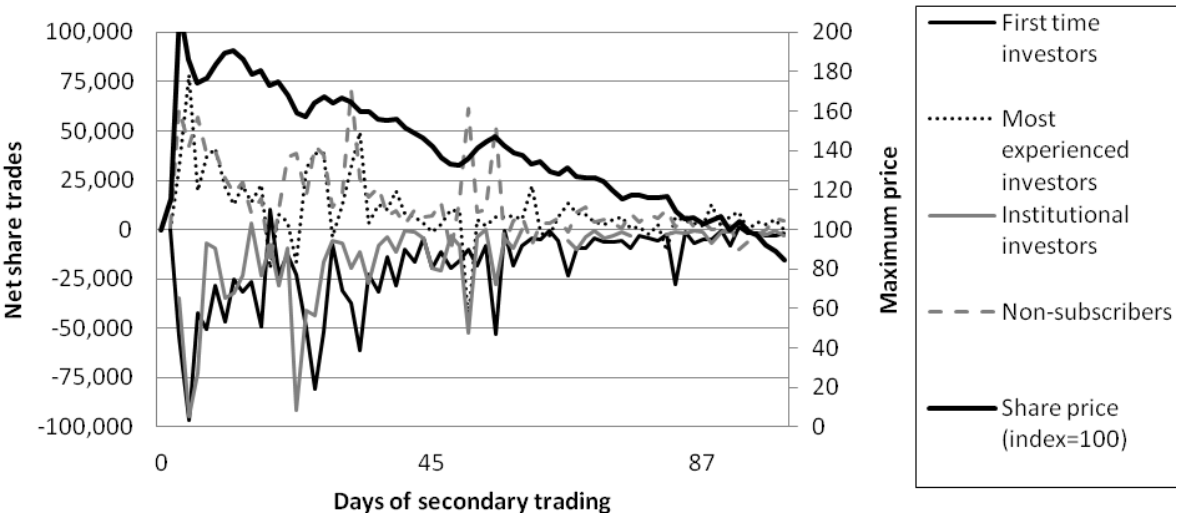


Figure 3.7: Net Share Trades of Key Investor Groups, 3rd IPO (Eveready)



Source: CDSC database

Table 3.1 Summary Statistics of Explanatory Variables, by IPO

	KenGen		ScanGroup		Eveready		AccessKenya		Kenya Reinsurance	
Variable	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
IPO subscribers selling in 1st month	0.02	0.15	0.08	0.27	0.02	0.15	0.05	0.21	0.05	0.22
Individuals	0.91	0.29	0.89	0.31	0.92	0.27	0.93	0.25	0.88	0.33
Companies	0.09	0.28	0.10	0.30	0.07	0.26	0.06	0.24	0.12	0.32
Investor size: small	0.21	0.41	0.45	0.50	0.89	0.31	0.72	0.45	0.64	0.48
Investor size: medium	0.22	0.42	0.49	0.50	0.05	0.22	0.16	0.37	0.15	0.36
Investor size: large	0.55	0.50	0.03	0.17	0.04	0.19	0.08	0.27	0.19	0.39
Investor size: institutional	0.01	0.10	0.02	0.14	0.01	0.11	0.01	0.10	0.01	0.10
First time investors	0.81	0.39	0.48	0.50	0.56	0.50	0.30	0.46	0.41	0.49
Second-time investors	0.00	0.00	0.34	0.47	0.22	0.41	0.22	0.41	0.25	0.43
Third-time investors, or owned shares prior to 1st IPO	0.19	0.39	0.18	0.39	0.23	0.42	0.48	0.50	0.33	0.47
Distance from nearest major city	18.39	32.77	10.79	25.09	13.74	27.36	14.81	28.92	15.13	28.76
Other town residents selling in 1st month	2.25	1.35	7.39	2.27	2.24	0.84	4.16	2.13	4.90	1.54
Other broker clients selling in 1st month	2.31	1.63	7.60	2.66	2.33	1.30	4.42	2.25	5.07	2.14
Median income (district)	9,129.22	3,400.13	10,178.05	2,997.76	9,664.76	3,250.60	9,594.00	3,271.30	9,585.16	3,272.57
Use of bank account (district)	0.43	0.12	0.47	0.11	0.45	0.11	0.45	0.12	0.45	0.12
Use of insurance policy or pension fund (district)	0.19	0.09	0.21	0.08	0.20	0.08	0.20	0.08	0.20	0.08
High school graduate	0.46	0.06	0.47	0.05	0.47	0.06	0.47	0.06	0.47	0.06
% urban population (district)	0.75	0.31	0.85	0.27	0.80	0.29	0.79	0.30	0.79	0.30

Sources: FinAccess 2006 Survey, CDSC database

Table 3.2 Firm and Offer-level Descriptive Statistics

Firm	Description	Date Listed	% State Ownership	Gross revenue, previous year (Ksh)	Avg. % change in profit over 3 yrs prior to listing	Level of IPO Advert.	Minimum Investment (Ksh)	Total # IPO Subscribers
KenGen	Electricity utility (monopoly)	May, 2006	100	11,021,000,000	-28.1	High	5,950	203,755
ScanGroup	Advertising conglomerate	August, 2006	0	2,343,628,000	54.2	Low	5,225	88,469
Eveready	Consumer products	December, 2006	35	2,244,635,000	-3	Low	4,750	188,266
AccessKenya	Internet service provider	June, 2007	0	577,881,000	9.5	Low	50,000	22,108
Kenya Reinsurance	Reinsurance (monopoly)	August, 2007	100	3,034,743,000	-24.2	High	19,000	138,264

Sources: Firm prospectus , CDSC database

Table 3.3: Binomial Logistic Regression Coefficients of Selling Shares in First 30 Days of Trading, by IPO

Variables	KenGen		ScanGroup		Eveready		AccessKenya		Kenya Re	
	M1	M2	M1	M2	M1	M2	M1	M2	M1	M2
Individual	-.264**	1.688***	-.711***	-.893***	-.399***	-.149***	0.042	0.145	-.168**	-.363***
	-0.092	-0.137	-0.038	-0.036	-0.03	-0.02	-0.029	-0.084	-0.064	-0.098
Size: Medium	-0.006	1.155***	.035*	-.069***	0.071	-.664***	.264***	-0.017	0.056	-.185**
	-0.056	-0.078	-0.017	-0.013	-0.103	-0.091	-0.052	-0.169	-0.033	-0.057
Size: Large	1.020***	2.770***	.244***	.133**	.551***	.568***	1.460***	1.566***	.308***	-0.03
	-0.05	-0.074	-0.061	-0.046	-0.059	-0.067	-0.038	-0.078	-0.061	-0.047
Size: Institutional	1.626***	3.626***	.806***	.637***	1.222***	1.424***	2.236***	1.987***	1.094***	0.041
	-0.155	-0.064	-0.043	-0.041	-0.043	-0.028	-0.061	-0.167	-0.057	-0.12
Experience: 2nd IPO			-.187***	-.607***	-0.024	.568***	.264***	.836***	-0.038	-0.061
			-0.02	-0.063	-0.034	-0.047	-0.051	-0.096	-0.026	-0.083
Experience: 3 + IPOs	0.097	.600**	-.334***	-.196*	-.214*	.728***	-.141***	-.455***	-.244***	.274***
	-0.052	-0.201	-0.06	-0.082	-0.093	-0.095	-0.032	-0.125	-0.059	-0.043
Distance to nearest city	0	0	0.001	0.001	0.002	0.002	0.002	0.002	-.001*	-.001*
	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
Town residents (% also speculating)	.824***	.826***	.125***	.123***	.373***	.374***	.255***	.257***	.200***	.199***
	-0.059	-0.059	-0.008	-0.009	-0.029	-0.029	-0.022	-0.022	-0.013	-0.012
Broker clients (% also speculating)	.191***	.209***	.072***	.068***	.193***	.195***	.113***	.113***	.131***	.134***
	-0.028	-0.027	-0.009	-0.009	-0.004	-0.005	-0.005	-0.005	-0.009	-0.008
Urban (% of district population	-.506**	-.496**	-0.243	-0.237	0.144	0.158	-0.224	-0.271	-.670***	-.737***
	-0.181	-0.177	-0.167	-0.174	-0.217	-0.217	-0.381	-0.377	-0.16	-0.171
Individual * 2nd IPO				.436***		-.684***		-.635***		0.15
				-0.042		-0.051		-0.122		-0.099
Individual * 3 + IPOs		-1.028***		0.011		-1.069***		.247*		-.525***
		-0.101		-0.047		-0.046		-0.11		-0.09
Individual * Medium		-1.192***		.147***		.837***		0.068		.420***
		-0.09		-0.017		-0.112		-0.152		-0.049
Individual * Large		-1.809***		.316***		-0.094		-0.154		.536***
		-0.056		-0.077		-0.127		-0.089		-0.041
Individual * Institutional		-2.412***		1.726***		0.103		.696*		1.531***
		-0.214		-0.103		-0.171		-0.325		-0.103
2nd IPO * Medium				0.033		0.117		0.23		-.282***
				-0.079		-0.11		-0.158		-0.082
2nd IPO * Large				0.009		-0.077		-0.17		-.296***
				-0.092		-0.1		-0.087		-0.085
2nd IPO * Institutional				.416***		-.854***		-.788***		-0.02
				-0.067		-0.087		-0.188		-0.09
3 + IPOs * Medium		0.29		-.224*		-0.089		.335***		-0.109
		-0.216		-0.097		-0.198		-0.101		-0.06
3 + IPOs * Large		.431**		-.305**		-.173*		0.094		-.140*
		-0.167		-0.114		-0.073		-0.123		-0.068
3 + IPOs * Institutional		.681***		-.165*		-.783**		.379***		0.184
		-0.142		-0.082		-0.279		-0.1		-0.139
Constant	-5.490***	-7.379***	-3.386***	-3.226***	-4.524***	-4.779***	-4.4***	-4.46***	-4.297***	-4.167***
	-0.25	-0.278	-0.191	-0.189	-0.153	-0.151	-0.242	-0.264	-0.155	-0.169
Log Likelihood	-18,245	-18,194	-20,936	-20,912	-18,520	-18,474	-4,132	-4,120	-24,685	-24,610
LR Chi-squared		101.83		48.54		9.55		25.11		151.58
Deg. Of Freedom		7		11		11		11		11
Chi-squared Probability		0		0		0		0.01		0
No. of Obs.	178,075	178,075	80,759	80,759	172,618	172,618	24,397	24,397	126,224	126,224

*p < .05 ** p < .01 *** p < .001